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Symposium on Cancer

EARLY MANIFESTATIONS OF MALIGNANT DISEASE.*

Illustrative Cases.

WILLIAM SEAMAN BAINBRIDGE, A. M., Sc.D., M. D., C. M., New York.

Malignant disease may be at times one of the paradoxes of pathology. That which is seemingly malignant sometimes is entirely benign, *per se*; and that which is apparently harmless may be potentially and actually quite the reverse. It is one of the problems of the prevention and cure of cancer to safeguard the patient from too radical a handling of the first horn of the dilemma, and from too conservative handling of the second. And it is one of the problems of the campaign of education against cancer to steer the public along a safe path, from which they will not deviate toward the stumbling block of too great optimism on the one hand or too great pessimism on the other.

Attention has been called elsewhere¹ to the difficulties involved in this question and I wish here to emphasize certain points, as nearly as possible, by means of illustrative cases.

The development of anything like a system of prophylaxis regarding cancer is coincidental with the inauguration, within the past fifteen years, of the era of experimental cancer research. Since that time efforts to solve the problem of the cause, and likewise the prevention, of cancer have assumed a character different from that of all previous investigation. Failure to establish the correctness of any of the proposed theories concerning the essential cause of the disease led investigators to concentrate their attention upon the factors which might be proven to exercise a predisposing influence in its etiology. It was hoped, in this way, to discover the essential cause by working out from the predisposing causes.

Accordingly, many research laboratories inaugurated a series of experiments upon short-lived animals, with a view to establishing the influence of heredity, irri-

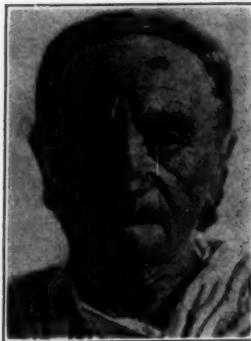
tion, environment, diet, and various other matters which were thought to be possible sources of information along these lines. Coincidentally with these experiments upon animals, observations with respect to the various predisposing causes of cancer having a direct bearing upon its prevention and cure have been made upon human subjects. Perhaps the most practical outcome of such study is the emphasis to be placed upon the elimination of all possible sources of chronic irritation, and the removal of benign neoplasms which are or which are liable, because of their situation, to become subject to irritation.

In the latter connection a great deal of important work has been accomplished, yet there is much more to be done. Interest in many apparently benign and harmless conditions has become focussed upon the question of their potentiality as the forerunners of cancer. There has come into use, because of this, the term "precancerous," as applied to benign neoplasms and other conditions. This term, however, may be challenged because of the risk implied by waiting for cancer to develop. Nevertheless, so far as we know at the present time, certain local tissue manifestations which, in the life history of one individual, may continue to pursue a benign course, may merge into a malignant course in another individual. It is manifestly extremely difficult and many times impossible to predict when the borderline between the precancerous and the cancerous is reached. This very difficulty imposes upon each member of the profession, whether general practitioner, surgeon, or other specialist, the obligation of giving serious attention to all conditions, however harmless in themselves, which may predispose the individual to the development of malignant disease.

It is now widely conceded that various benign or non-cancerous conditions may become cancerous. The responsibility for the prevention of some forms of cancer, therefore, is in large measure justly placed upon the general practitioner, the dermatologist, and the specialist in other fields. These are usually consulted for some purpose before the surgeon is called upon to operate for cancer. I am convinced that a large proportion of severe and often fatal malignant neoplasms may be traced to apparently insignificant and harmless warts,

*The Campaign of Education Against Cancer: Educational, Experimental and Clinical.—*Am. Jour. of Dermatology*, St. Louis, vol. XV, No. 7, 1911.

¹The Cancer Problem, New York, 1914. Section II (Predisposing Causes), Section VIII (Prophylaxis), Section XIV (The Campaign of Education Concerning Cancer).



Case 1



Case 2



Case 3



Case 4

moles, nevi, and scars, which have been subjected to irritation, mechanical, or otherwise, and which, in the earlier stages, would have been easily and completely removable by surgical means. It is not to be inferred from this, however, that every tiny wart, mole or other skin blemish, that every lump and bump on any part of the body, is to be ruthlessly removed. Many of the conditions which come under this category, when not subjected to repeated acute traumatism or to chronic irritation, give no trouble in healthy persons whose lives are regulated on a well-ordered plane. In many instances, however, in a favorable host, and under favorable conditions, as when subjected to constant irritation, or to repeated injury, these otherwise harmless lesions become definite sources of danger, and in such cases removal is obligatory. Neglect in this regard is very apt to find the border line between benign and malignant crossed sooner or later. The individual then becomes the subject of early cancer, which may still be lightly considered or perhaps entirely neglected. Many of the cases of advanced and irremovable cancer give just this history.

The following cases illustrate different phases of the precancerous and early malignant lesions which, when properly attended to forestall the graver conditions:

CASE I.—L. E., female, 57 years of age, admitted to the New York Skin and Cancer Hospital, June 5, 1912, for treatment for the growth on the forehead, shown in Fig. 1. In the right temporal region is also to be seen a small melanotic mole, still quiescent. The growth on the forehead, which had appeared as a small mole, remained quiescent for twenty years or more, and had taken on slow growth following a scratch, inflicted accidentally four years before. Both neoplasms were excised. Under the microscope the one from the temporal region proved to be a melanotic mole, with no apparent malignant tendency; the one from the forehead was epithelioma.

CASE II.—S., female, 70 years of age. Admitted to the New York Skin and Cancer Hospital, April 3, 1915, with the condition shown in Fig. 2. This started several years before as a small "sore" on the side of the nose near the inner canthus of

the left eye. It grew slowly until it reached the proportions shown. The growth was excised, and the area fulgurated. Pathological examination verified the clinical diagnosis of epithelioma.

CASE III.—F. B., female, aged 8 months. Admitted to the New York Polyclinic Hospital, January 3, 1913, for advice concerning the condition shown in Fig. 3. The growth, situated on the side of the nose, below the inner canthus of the left eye, had rapidly increased in size until it was about the size of a hickory nut. It was excised, and proved, upon pathological examination to be angiosarcoma.

The region around the bridge of the nose and inner canthus of the eye is a favorable one for extension because of the peculiar structures in the vicinity, and some of the most rapidly growing and fatal malignant neoplasms are found in this locality, in children as well as in adults. It is therefore especially important that no abnormal tissue manifestation here be overlooked or neglected.

CASE IV.—L., male, 4 years of age. Brought to me, April 17, 1915, for advice regarding a brown mole at the outer canthus of the right eye, as shown in Fig. 4. This brown spot was about the size of the end of a lead pencil when the child was born. It grew gradually and became darker, increasing in size very rapidly of late, until it was about the size of a silver dollar. It was excised, and proved, upon pathological examination, to be a "melanotic mole, growing rapidly, showing suspicion of early malignancy," the examination having been made by Dr. J. M. Jeffries, pathologist to the New York Polylinic Hospital.

CASE V.—M., female, 48 years of age, when admitted to the New York Skin and Cancer Hospital, February 4, 1914, for treatment for the growth on the side of the nose, shown in Fig. 5. This began as a small wart, irritated by constant picking at it, and beginning to grow, caused her uneasiness, and she sought advice. It was excised, and proved to be epithelioma. Left alone, it might have remained quiescent for a number of years longer, but the chances are it would eventually have undergone malignant change.

CASE VI.—W., male, aged 14 months. Brought to me August 11, 1912, for the growth on the face, shown in Fig. 8. This was first noticed when the child was three weeks old, as a slight redness under the skin. It remained unchanged until he was about four months old, when it appeared on the skin, growing very much as a mole, except that it was blood-red. It remained the same for several weeks, then underwent the



Case 5



Case 6



Case 7



Case 8



Case 9



Case 10



Case 11



Case 12

change, and gradually grew to be quite perceptible. The growth was excised, and the pathological report was hemangioma telangiectoides.

We have here a "mother's mark" which became elevated and which began to grow sufficiently rapidly to indicate that it would have become a serious menace had it not been promptly removed.

CASE VII.—O., female, 60 years of age. Referred to me for treatment for the growth on the right side of the face, between the wing of the nose and the angle of the mouth (Fig. 7). This began as a small pimple, a year before, developing to the size of a French pea. It was elevated and red, without crusts, sometimes painful, sometimes bleeding. It had been treated by her family physician with zinc oxide ointment for two months, the patient objecting to operation. Lately she consulted me, but still refuses operation. The diagnosis is one of undoubted epithelioma.

CASE VIII.—M., female, 50 years of age. Admitted to the New York Skin and Cancer Hospital, April 22, 1915. Examination showed epithelioma behind the right ear, and a spot of lupus vulgaris, with epithelioma superimposed, on the left cheek. These growths were excised, the glands of the left side of the neck were removed, and the areas fulgurated. Clinical diagnosis was confirmed by microscopic examination. Fig. 8 shows the site of the face lesion.

The condition behind the ear, which was plainly epitheliomatous as judged by clinical appearances, was neglected, whereas the lupus on the cheek, which was not malignant, was subjected to repeated cauterization at the hands of her family physician. It is impossible to say, of course, just how much influence this treatment had in giving rise to malignant degeneration of this area of lupus, but it is fair to assume that the repeated irritation by the caustic had a definite influence in this direction.

CASE IX.—S., female, aged 61, admitted to the New York Skin and Cancer Hospital, October 9, 1908. The condition for which she sought advice is shown in Fig. 9. It proved to be a small sebaceous cyst, with epitheliomatous degeneration in the center. The patient had diabetes at the time, for which she was treated, the sugar soon disappearing from the urine. The cyst with the growth was removed and the patient has been well ever since.

The influence of diabetes upon the tissues with reference to malignancy is a matter still under investigation.

CASE 10.—M., male, 44 years of age, consulted me November

22, 1913, regarding a mole on the right side of the face, between the wing of the nose and the angle of the mouth (Fig. 10). This appeared six years before, remained quiescent for four years, then began to grow, until it became about half as large as a ten cent piece. A year before he consulted me he applied a caustic acid, causing its temporary disappearance. It was removed under local anesthesia, and the pathological examination showed it to be epithelioma.

CASE XI.—F., female, 39 years of age, admitted to the New York Polyclinic Hospital, March 10, 1911, for removal for a lipoma on the shoulder and an angioma on the lower lip. The lipoma on the shoulder had existed for a number of years, and the angioma on the lip (Fig. 11) for as long as she could remember. Both growths were excised.

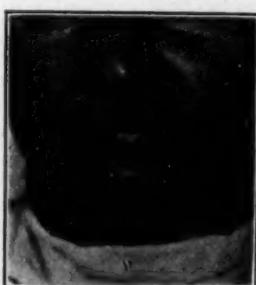
The papillary angioma does not amount to much in itself, but in a situation like the one here portrayed it is apt to undergo sufficient irritation to cause malignant degeneration in time. The safer plan, therefore, is to remove it before such a contingency arises, particularly in view of its situation at the point of transitional epithelium. Whether Cohnheim's theory of the cause of cancer be accepted or rejected in full, it seems fairly certain that tissues in the line of transition from one kind of cells to another is less resistant than tissue not so placed.

CASE XII.—K., male, 50 years of age. Admitted to the New York Polyclinical Hospital, April 12, 1910, for removal of a growth on the lower lip (Fig. 12). This was removed, and upon microscopic examination proved to be early epithelioma.

This man was an inveterate smoker, and presumably, in line with the view of "smoker's cancer," the irritation of the pipe or cigar give rise to the tissue change which eventuated in malignancy. Some, many, in fact, of the most distressing cases of cancer of the jaw and glands of the neck give the history of incessant smoking. Patients should be urged not to hold the pipe or cigar always on the same side of the mouth, if they smoke at all, but to shift its position, and to avoid burning the lips or tongue.

CASE XIII.—F., female, 54 years of age, consulted me for advice concerning the condition shown in Fig. 13. This appeared three years before, beginning as a small pimple on the upper lip, just below the nose. It grew slowly, finally ulcerating, bleeding, and painful at times. This was excised and the area fulgurated. Pathological examination showed it to be epithelioma.

CASE XIV.—F., female, 30 years of age. The condition for



Case 13



Case 14



Case 15



Case 16



Case 17



Case 18



Case 19



Case 20

which she consulted me was a small growth on the side of the tongue, as shown in Fig. 14. This was excised, with a free margin of healthy tissue. This proved to be papilloma, on microscopic examination, but was removed because of constant irritation and to prevent possible and quite probable malignant degeneration.

In this case the trouble started from a spot of irritation from a defective tooth. The dentist, therefore, can play a very important role in the prevention of cancer, and patients should be warned of the dangers arising from neglect to consult a capable and conscientious dentist. Jagged and irregular teeth, badly fitting crown-and-bridge work, poorly adjusted plates, are prolific sources of irritation, and doubtless many cases of cancer of the tongue, lips, and buccal mucous membrane are initiated in this way. Furthermore, it is not determined just what part intestinal toxemia may play in the causation of cancer, and the constant swallowing of effete and germ-laden material which accumulates within and around decayed teeth may have more far-reaching ill effects than can at present be estimated.

CASE XV.—R., male, 41 years of age when he first consulted me, February 12, 1907, concerning a small tumor at the tip of the tongue, as shown in Fig. 15. The small nodule, together with a wedge-shaped section of healthy tissue surrounding, one inch long, with the apex toward the base of the tongue, was removed from the median line of the tongue. Careful microscopic study of the nodule itself, and of sections taken along the healthy tissue, was made. The nodule proved to be epithelioma. No cancer cells were found in the remainder of the tissue, until near the very apex of the wedge was reached. There a nest of suspicious cells was found. A day later a longer angle was made by the removal of another small section at the apex of the wedge-shaped incision. Presumably all malignant cells were removed at the second operation, as there has been no sign of recurrence.

CASE XVI.—M., female, aged 17 years. Admitted to the New York Skin and Cancer Hospital, November 10, 1908, for treatment for a swelling of the tongue, as shown in Fig. 16. The tongue presented a growth in the right side, middle, about the size of a hazel nut. This was hard, smooth, and freely movable. It had started as a very small nodule two years before. It gave no discomfort except interference with speech. The growth was excised, and upon microscopic examination proved to be enchondroma.

Defective teeth, in this case, as in many others, may have had some effect in producing the tissue change which resulted in this neoplasm. The neoplasm of itself was not malignant, but by continued growth would have become so by virtue of its interference with speech, deglutition, and perhaps eventually with breathing. It might also have caused cancerous degeneration.

CASE XVII.—W., female, 23 years of age, consulted me March 8, 1915, regarding a tumor in the breast. Upon physical examination the large pigmented mole, shown in Fig. 17, was noted upon the right forearm. It was slightly elevated. It was excised, and the pathological report, made by Dr. F. M. Jeffries, was "Pigmented mole, possibly early malignancy."

This mole had been present for years, but had latterly begun to thicken and become elevated—a signal of danger, not wisely overlooked.

CASE XVIII.—M., female, aged 35 years. Consulted me April 7, 1915, regarding small growths, one on each wrist, as shown in the picture of the right (Fig. 18). These had existed since birth, each being at that time about the size of a pin head. About three years ago the one on the right wrist began to increase in size, growing slowly, until it became as large as

a silver quarter. When she consulted me this was melanotic in character, with scab formation, and bled easily. The growths were excised. The pathological report was as follows: "Growth from left wrist shows scattered naevus cell nests in derma. A moderate amount of pigment present. The growth from the right wrist shows areas of cells of the naevus type, also areas of large cells mixed with pigmented cells. These show irregular growth, have caused thinning of the epidermis and almost ulceration. Melano-sarcoma." Dr. D. Stewart Dodge Jessup made the examination.

Melanotic moles, particularly when elevated, and more especially if subjected to irritation, are apt sooner or later to undergo sarcomatous degeneration, and should, therefore, be removed. If this is not permitted, the patient should be kept under careful observation.

CASE XIX.—G., male, 46 years of age, consulted me February 12, 1912. The patient, a physician, after years of x-ray work, developed epithelioma on the thumb, index finger, and little finger, involving the base of the ring finger (Fig. 19). The third and fourth fingers were amputated and the wound fulgurated. The small growths on the thumb and index finger disappeared under fulguration.

It is now generally conceded that x-rays may initiate a malignant process, when employed for long periods of time, and unless the operator protects himself with great care from burns.

CASE XX.—P., male, 65 years of age. Admitted to the New York Skin and Cancer Hospital, June 22, 1912, for treatment for the condition of the hand shown in Fig. 20. This growth was first noticed three months before, following a severe burn. It was excised. Pathological report confirmed the clinical diagnosis of epithelioma.

Warts such as this may exist for many years without giving trouble, and may then go on to malignant degeneration. This is particularly apt to occur in old people whose skin show a tendency to the formation of senile keratoses. Malignant neoplasms developing upon these keratoses may go on to metastasize in other parts of the body. So-called senile warts, if they show any tendency to undergo change, should be removed, and in any event, kept upon observation.

CASE XXI.—R., male, 74 years of age. Admitted to the New York Skin and Cancer Hospital, July 17, 1911. Two years before a small pimple appeared over the right breast, an inch above the nipple. It grew rapidly until it became the size of a walnut. Six months before admission ulceration took place. No treatment had been received previous to admission, at which time the condition was as shown in Fig. 21. The growth, with a margin of healthy tissue, was excised. The pathological report showed sarcoma of the mixed cell type. There has been no recurrence to date.

CASE XXII.—L., female, 52 years of age, consulted me in March, 1915, on account of a tumor in the left breast. A very small tumor, perceptible only upon careful palpation, was found, but the nipple showed beginning retraction, as may be seen in Fig. 22. Early carcinoma.

In this case, unlike many cases of cancer of the breast, the so-called classical sign, retraction of the nipple, appeared at a very early stage of the development of the neoplasm.

CASE XXIII.—K., male, aged 56 years. Admitted to the New York Skin and Cancer Hospital, April 17, 1915. Examination showed a growth, which upon microscopic examination proved to be medullary carcinoma, of the umbilicus, with secondary

Reported, Case XIX, in "The Campaign of Education Against Cancer: Educational, Experimental and Clinical.—Am. Jour. of Dermatology, St. Louis, vol. XV, No. 7, 1911.



Case 21



Case 22

nodules in the skin in the neighborhood. The growth appeared at the umbilicus two years before, developing into an ulcer which discharged freely. This was excised and the area skin-grafted. From this carcinoma in the navel the man has developed cancer of the liver, from which he will eventually die. It was human, however, to remove the discharging growth from the surface of his body, and relieve his mind of this constant source of worry and discomfort, making him as comfortable as possible.

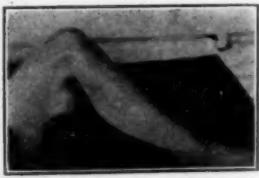
CASE XXIV.—H., female, 54 years of age, consulted me November 10, 1909, when she presented the large lipoma shown in Fig. 24. This was removed, and there has been no trouble since.

The lipoma was itself innocuous, but because of the size, the pressure and irritation caused by the friction of chairs, car seats, etc., it was in line for degeneration of the surface, and subsequent breaking down. Sometimes lipomata, in the course of development, in trying to push out of their capsules, may give rise to considerable pain. In any event it is the part of safety to remove them.

CASE XXV.—M., male, aged 27 years. Admitted to the New York Polyclinic Hospital, March 8, 1911, with the condition of the right leg shown in Fig. 25. This began as eczema, ulcerating, and extending as shown in the picture. In one place there was a spot that was suggestive of malignant degeneration. Under treatment with zinc oxide the whole area cleared up completely.

A case like this should be kept under surveillance, despite the fact that it cleared up under non-surgical treatment. In this locality, with the chains of lymphatics near by to carry infection upward and throughout the body, very extensive carcinoma may develop upon the base of an eczematous ulcer. I have seen a number of cases of this character.

Cases such as those reported above may serve as useful texts upon which to base important lessons concerning the prevention of cancer. For this reason they are cited. Inasmuch as the essential cause of the disease is unknown, any efforts aimed at prevention must of necessity be directed toward the elimination of factors which render the body, as a whole, or in localized areas, less resistant to the initiation and development of a malignant process. These factors, in many instances, concern the most ordinary affairs of life, from pipe stems to corset steels, from suspender buckles to hat bands, and from these to the more specialized and com-



Case 24

plex matters, from x-ray apparatus to "human plumbing." In no single instance may it be affirmed with absolute assurance that one or more of these factors actually did inaugurate the cancer in a given case, but the weight of evidence is certainly heavily in favor of this contingency. The motto, "Safety First," is nowhere more obligatory than in the campaign against cancer. Wherever there is presumptive reason for believing that a given factor plays a causative role in

cancer production, no pains should be spared in the elimination of this, whatever it may be.

It is important, therefore, that patients be taught the danger of neglecting any of the factors which, from repeated observation, clinicians are now convinced help to induce cancer. It is important, too, that this be done without the inculcation of unnecessary fear and alarm. There is always danger of emphasizing one point, at the expense of failure to direct attention to another. We are apt, for example, to lay stress upon the matter of chronic irritation, about which so much has been said and written, and concerning which so much experimental work has been carried on, to the exclusion of other matters which may prove to be of equal importance. It may be proved, for example, that the body as a whole may, in consequence of general lowered resistance, furnish favorable soil not only for the initiation of a primary malignant neoplasm, but of secondary or metastatic growths in one or more parts. General lowered resistance may, therefore, be no less important than localized lowered resistance. Defective teeth, to illustrate, may give rise to localized lowering of tissue resistance, in the mouth, on the tongue, on the lips, by constant irritation of the parts. We have cited instances in which this seemed to be the case. We can-



Case 23



Case 25

not say, however, how potent these defective teeth may be in inaugurating a generally impaired state of the body which renders it less resistant to cancer as well as to many other diseases.

The public should be taught, therefore, that it is the part of safety to look after both internal and external hygiene—to so order and regulate life that not only the body as a whole, but each individual part of it, may functionate in a manner most conducive to health. In doing this it is obligatory that warts, moles, nevi, scars, "sores," "pimples," and the many seemingly inconsequential localized tissue abnormalities, be given due consideration when they are so situated as to render them liable to repeated trauma or injury or to chronic irritation. This is applicable with reference to the infant as well as to the aged, for no age is exempt from one manifestation or another of this indefinable something which we call tissue predisposition, from precancerous conditions, and from cancer.

Rational attention by physicians and laymen to these seemingly inconsequential conditions would undoubtedly tend to lessen the proportion of cases of cancer, and certainly of irremovable, inoperable, and hence fatal, cancer. To keep a watchful overlook of all patients with reference to these conditions is the duty of every physician and surgeon.

34 Gramercy Park.

THE CANCER PROBLEM AND ITS RELATION TO THE PUBLIC.

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To those who have given serious thought to the cancer problem it is obvious that it presents a two-fold relation—on the one hand is the challenge to science, on the other a compromise with ignorance and credulity. The doctor is pursuing the cause of cancer with commendable zeal—meanwhile the public is being fed on fallacies, and is not reaping the benefit of the indisputable facts regarding cancer.

In other words we must recognize in the discussion of cancer two problems—one problem belongs exclusively to the scientist, the other is a problem for the public.

The scientist is seeking the cause of cancer with tireless energy. To this end there have been large appropriations of money, cancer commissions have been appointed, and the best brains have been employed for research work in the laboratory under state and national patronage.

The cause of cancer is today the medical problem upon which the best intellectual efforts are being concentrated.

But this is not the problem which immediately interests the public. To those who appreciate the unconquerable spirit of scientific inquiry nothing can remain indefinitely hidden. There are no permanent secrets in the universe. "Seek and ye shall find" is an epitome of the philosophy of science; and revelation is the scientists' sure reward. The cause of cancer will be found, sometime in the future, but after it is discovered what reason have we to believe that its treatment will be otherwise than what it is at present?

The discovery of the cause of a disease does not necessarily imply a radical change in its treatment.

Thirty-five years ago the cause of tuberculosis was discovered, but its treatment has not been materially changed. Sunshine, fresh air and hypernutrition was the treatment then and is the recognized treatment now.

What then is the cause of the wonderfully benevolent results attained in the management of tuberculosis?

The answer is obvious.

The public has been taught how tuberculosis the doctor. They have been educated by the doctor to appreciate the essential facts about tuberculosis.

The public have been taught how tuberculosis is communicated. It appreciates the value of sunshine and fresh air. It understands that the most patent vehicle for the spread of the disease is the expectoration of the patient which must not be deposited where it will become dried, and endanger the lives of others by being disseminated through the atmosphere.

These are the simple facts which the public has been taught; and it has not been slow to appropriate and apply them.

The doctor has been showing the public how to get along without him, and note the beneficent effect of this co-operation on the part of the public.

Tuberculosis is rapidly decreasing, its curability is unquestioned, and its ultimate extermination is not an impossible dream. Now this is but an example of just what is needed today—a campaign of education

in reference to the cancer problem which will put the public in possession of facts, and when the facts are forthcoming the public will appropriate and apply them in cancer as they have in tuberculosis.

It is gratifying to note that this campaign of education has already started in Germany and in England where popular appeal is made through the daily press and the public lecture. Childe of England has written a book entitled "The Control of a Scourge," remarkable for its simple, clear, forcible presentation of the cancer question, which ought to have a powerful influence in its appeal to an intelligent public.

If a campaign of education regarding cancer is to be inaugurated some timid advocates feel that an important consideration will be to determine what facts about cancer should be imparted to the public. The facts about cancer are not so numerous that we need to be too discriminating in dealing with the public—all that is known about cancer may safely be imparted to the public. The theories about cancer are innumerable, but the need of the public is facts, and these facts should be given in a simple direct manner, stripped of all technicalities and in the language of the layman.

The suggestions of Childe are most admirable in planning a program adapted to the needs of the public. A mere outline can be suggested here, but a recital of the topics and the general method of presenting them may be helpful to those who feel the importance of joining the active workers in this call to service.

First: The wide distribution of cancer.

There is no country, no clime, no race, no occupation that is exempt. It is found alike among savages and civilized. It is found in all sorts of animals, both wild and domestic. It extends throughout the entire vertebrate and possibly the invertebrate kingdoms. It occurs as frequently among vegetarians as meat eaters, among teetotalers as alcoholics.

The Imperial Cancer Research Fund, in its report, remarks that climate, soil, occupation, diet, must be relegated to a subsidiary position in determining the incident of cancer in mankind. Some observers state that cancer is on the increase. It is difficult to determine whether it is actually more prevalent or whether improved methods of diagnosis make it seemingly more prevalent. Certain it is that cancer is common and that it occupies a prominent place in the list of mortal diseases. It forms a veritable scourge in the community not only as Childe observes because it is so frequently fatal, but because its ravages are among those who have reached the meridian of life or after. Among those whose cumulated experience and knowledge form the community's most valued asset. For whatever may be said to the contrary the intellectual asset at least of every civilized community is preponderated by the men after forty and not before.

Second: The next fact to emphasize is that **cancer is not inherited**. Cancer like all other organisms grows best in suitable soil, that is, some people are more liable to be attacked by cancer than others. It should be made very plain that people do not inherit cancer, but that certain families inherit certain kinds of tissues which form a favorable soil for cancer growth. Disease is not inherited, but we get from our ancestors certain kinds of tissue which form a suitable soil for certain kinds of diseases to grow in. There is no better illustration of this incident of

heredity than to compare people to the trees of the forest. The trees are all similar in root, trunk, branch and leaves, and yet there is an essential difference which we can't demonstrate, but which we know by practical experience.

We know that one is an oak, and another is a pine, and you can't do with a pine tree what you can do with an oak. They both look equally sturdy under a clear sky, but when the storm breaks, the pine will succumb while the oak stands unmoved.

Surgery cannot do for a pine man what it can do for an oak man. We find, it is true, cancer running in certain families, this coincidence however does not imply that the disease is inherited, but that the kind of tissues predominated in these families, which form suitable soil for cancer growth. Some families grow tuberculosis, others cancer, but heredity means nothing more than adaptation of soil to seed.

Third: The cancer period of life.

Cancer not only requires a suitable soil but a suitable age. Cancer is a disease of middle or advanced life. It is rare to find cancer in the first half of life. The last half is the cancer period. The large majority of cancers make their appearance between the ages of forty and sixty-five. Now this age incident has an important bearing in the development of cancer. Certain symptoms, which in early life are of little importance, when they occur in the cancer period, assume suspicious significance. As Childe has tersely observed "Cancer needs a suitable soil with a top dressing of old age."

Fourth: The importance of chronic irritation.

Chronic irritation of the tissues is an important factor in producing cancer. It is significant that nearly all cancers are located at sites where irritation is an active factor. For example, cancer of the tongue is almost always initiated at a point where the tongue is constantly rubbing against the sharp edges of a broken tooth. Cancer of the stomach is engrafted upon chronic ulcers; cancer of the gall bladder follow gall-stones; cancer of the lip follows constant pressure from the stem of the pipe. These illustrations may be multiplied to emphasize the role of chronic irritation as a predisposing factor at least in causing cancer.

Fifth: Cancer is at first a local disease.

It is very important to emphasize the fact that cancer is not a general disease with a local manifestation but that it is always primarily a local disease confined to the part first attacked. Cancer of the lip is primarily a disease of the lip only in which the rest of the body does not participate.

Cancer of the breast is primarily confined to the breast and has nothing to do with a diseased condition of the blood or a poisoning of the system.

This the public must be made to appreciate in order to remove the hopeless attitude of mind which the majority of cancer victims assume from the beginning. Most of these victims believe that if they have cancer their condition is hopeless, and there is no use consulting the doctor.

Sixth: After an appreciable time cancer ceases to be local, and spreads and disseminates itself throughout the body.

The point to be emphasized here is that cancer is at first always local, and that there is a period in which it remains local before it spreads from its original focus.

Now this statement that cancer is at first local and

remains so for an appreciable time is the crux of the cancer problem.

Is Cancer Curable? Yes, cancer is curable, and this is another fact which should be driven into the public mind in order that it may replace the false attitude of despair which seizes the cancer victim.

Cancer is curable by early and adequate operation, and this is the only reliable remedy which can be offered.

Cancer is curable because it is at first a local process, and as long as it remains local it is curable.

It is only after an appreciable time that it ceases to be local and invades the system, and then it is incurable.

The significant fact to be constantly emphasized is that the cancer must be removed before it ceases to be local.

We must openly confess to the public that the patients operated upon for cancer are not generally cured.

We must acknowledge that the cures are lamentably few—only one out of every two cases of cancer of the lip; only one out of every four cases of cancer of the breast; only two out of every hundred cases of cancer of the womb.

We must not try in any way to minimize the facts, for the facts just as they are form the most powerful plea for the public's co-operation.

We present therefore to the public a curable disease which is seldom cured.

What is the answer to this? It is plain, unmistakable and incontrovertible. The patient don't come early enough to the doctor to receive the benefits of operation.

Every cancer was at one time local—confined to the part attacked; then it was operable and curable. If every patient with a cancer came to the doctor in time, they could be cured.

We are now curing one case of cancer of the breast out of every four. But the other three cases were at one time also curable. Every case of cancer of the breast is curable if the patient came in time while the disease is local.

It is evident that delay is the factor that prevents the remedy from being effective.

It is the rarest thing for a surgeon to see an early case of cancer. Patients wait months and years, they resort to every conceivable form of humbuggery, and they consult the doctor only when the doctor's advice can be of no curative value.

The cause of delay in consulting the doctor is in part due to the fact that early cancer is insidious and gives few symptoms. All the more need to impress upon the public the importance of apparently insignificant symptoms during the cancer period of life. Pain, the main signal of disease, is rarely present in early cancer. There may be a sore which refuses to heal, a lump which gives no distress, but if such symptoms occur during the cancer period they should arouse suspicion of cancer and should be submitted to the doctor for interpretation.

Furthermore the public must be taught to be satisfied with nothing less than the ultimate authority of the microscope. For if the family physician cannot tell the nature of a growth, the microscope can, and nothing less than scientific accuracy should be accepted by the public.

These are the simple facts about cancer.

It is just as easy to acquaint the public with these

facts about cancer as it has been in presenting to them the facts about tuberculosis.

In this campaign of education we should plan to begin at these strategic centers from which knowledge is most easily diffused throughout the community. We should educate our nurses, our public school teachers, our settlement workers—and from these sources of accurate information let the truth about cancer be presented to the masses.

This work might well be systematically conducted by a specially appointed committee in every town, and only by such organized effort can the public reap at once the full benefits of the knowledge we already possess.

394 Clinton Avenue.

CANCER TO-MORROW.

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For a new perspective relating to the cancer question let us take two series of facts; one relating to the nature of growth of new cells, and the other relating to various kinds of measures which have occasionally proven to be curative, and which in that very fact require explanation.

First series of facts:

(1) In cancer we have the characteristic phenomenon of unrestricted cell division.

(2) The chromosomes of cancer cells are qualitatively different from those of normal cells.

(3) A definite number of chromosomes we know to be necessary for balanced activities of a normal cell.

(4) Abnormal mitosis causes abnormal distribution of chromosomes.

(5) Lost chromosomes are not replaced, but cells with less than the normal number of chromosomes may continue to increase and to form characteristic mass.

In connection with this last item let us make a parallel with haploid cell division in higher plants; a reversion atavistically which sometimes occurs, toward primitive plant method in growth.

In order to establish some kind of thesis let us now assume that cancer cells represent atavism toward ancestral types, and they may develop after the manner of haploid cells in higher plants.

In order to keep the picture well in mind let us speak of the "haploid" cancer cell. This is not biologically correct, but it furnishes a sort of *point d'appuis* from which we may work.

The "haploid" cancer cell has its peculiar enzymic interactions with normal cells, and with its atavistic congeners.

Let us assume that nuclei of the "haploid" cells may contain chromosomes which inhibit normal cell division. The "haploid" cancer cell continues to react to its peculiar division stimulus and to form structures after the manner of the haploid plant cell.

Cancer must in the first place have begun from development of a single abnormal cell. This abnormal cell, let us assume, has resulted either from abnormal division of some normal tissue cell, or it has remained as a latent embryonal cell until some stimulus excited it into division. In any event we appear to be dealing with the question of individuality of chromosomes. Different chromosomes in one cell may have different

kinds of activities but in the normal cell these are balanced activities.

Abnormal mitosis with unequal distribution of chromosomes of one kind may allow the new cells to demonstrate activities belonging to one kind of chromosome, hence unbalanced activity. This unbalanced activity of certain "haploid" cancer cells may result in the growth of a neoplastic mass.

The theory that haploid growth may arise from latent embryonal cells instead of from abnormal division of normal cells would seem to have a basis in the phenomenon of mixed cell neoplasm of the parotid gland;—several kinds of neoplastic cells developing simultaneously in response to some exciting agent.

The theory that "haploid" cancer growth may arise from abnormal division of a normal cell, would appear to have a basis in the fact that cancer belongs to an age of the individual in which senescence of cell protoplasm occurs in excess of reconstruction.

It is not essential that we insist upon choosing either one of these two ideas relating to the origin of the cancer cell. Both theories might be correct. Let us now take up our second series of data. These will refer to that part of the question which directly interests surgeons.

(1) Cancer is sometimes checked through the action of beta or gamma rays of radium.

(2) Cancer is sometimes checked through the influence of Coley's toxins.

(3) Cancer is sometimes checked through the influence of faith cures (Mattei testimony).

We have here apparently three very separate and distinct kinds of checking influence. May we not from this fact assume that a whole new principle is in view. Should we speak of "destruction" of morbid growths as a result of application of different resources, or may we not better introduce a quite new idea,—that of stimulation of normal tissue cells to a point at which they resist the influences of "haploid" cell reaction. This to my mind opens an entire vista.

May we not assume for purposes of present argument that beta and gamma rays of radium, that Coley's toxins, that mental influences, may at all times arouse hormone secretion on the part of senescent normal cells in such a way that for a time, and sometimes permanently, the rejuvenated normal cells resist the influences of the enzymes of peculiar chromosomes of "haploid" cancer cells.

This hypothesis is perhaps more tenable if we remember that cancer increases in a community in proportion to the influences of decline belonging to civilized life in that community.

If this haploid cell hypothesis is tenable, we may assume that reconstructive diet and hygiene are to play important necessary roles in our treatment of cancer to-morrow, and that reconstructive measures are not to be neglected at the time when we directly apply resources which are known to be beneficial at times, in the treatment of some cancers.

616 Madison Avenue.

C. E. de M. Sajous says that the thyroparathyroid secretion enhances oxidation by increasing the inflammability of the phosphorus which all cells, particularly their nuclei, contain. All pathogenic elements in which phosphorus is present, bacteria, their toxins or endotoxins, toxic wastes, etc., are thus rendered more vulnerable to the digestive action of the plasmatic, phagocytic or cellular defensive ferment.

"CANCER TENDENCY" IN LARGE INTESTINE.

Carcinoma of Colon. A Case Occurring Nearly Twenty Years After Extirpation of a Similar Tumor.

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The case to be reported here is interesting, first, because it is unusual and second, because it seems to demonstrate the existence of what may be called a tendency to cancer.

The patient, J. C., was first operated upon when he was 51 years old for the removal of a carcinoma of the transverse colon which almost completely stenosed the lumen of the gut¹. He was referred to me in June, 1894, by Dr. Morris Manges and the operation was performed at Mt. Sinai Hospital, the tumor being extirpated with about six inches of colon and anastomosis made with Murphy button one and three-quarters of an inch in diameter. The central canal of the button was large enough for the passage of feces of average consistency. Much adherent great omentum had to be removed at the same time, but numerous large lymph nodes were left behind and it was expected that prompt recurrence would take place. The patient, however, made a beautiful recovery and passed the button on the eighteenth day. There was an immediate gain of weight and all intestinal symptoms disappeared until some time in 1910, when he came to me with what looked like an acute intestinal obstruction. He recovered from this attack, however, without operation, and at rare intervals there were other attacks of a similar nature.

On March 16, 1914, the patient now 70 years of age, once more entered Mt. Sinai Hospital for surgical treatment. A few days before his admission he had been seized with the usual cramps and vomiting with constipation. Enemas resulted in the free movement of the bowels and all symptoms were relieved.

The x-ray, by Dr. Jaches, showed obstruction in the sigmoid on examination with the barium enema. The barium meal, however, gave no evidence of any obstruction.

The man was observed carefully for two weeks and then he began to have cramps again, so an operation was urged and this time accepted.

Examination by rectum and by abdominal palpation gave no information. The patient's general condition was good in spite of some emaciation.

On March 30, 1914, he was anaesthetized with ether, and under the relaxation the faintest possible sensation as of a mass in the left iliac region could be determined. With the diagnosis of probable postoperative adhesions a two-and-a-half inch incision was carried through the fibres of the left rectus muscle just above the inguinal region and immediately on entering the abdomen the finger encountered a large, hard tumor. The segment of gut above the tumor was dilated and hypertrophied, that below apparently normal. The tumor was bound to the pelvic wall by a cord-like induration between the layers of the mesocolon so that the tumor-bearing coil could not be withdrawn until it had been freed by dissection. In the omentum and mesocolon were numerous small, hard nodules, apparently metastases, and one rather hard gland in the left groin. The tumor-bearing gut was now drawn through a punched hole in a piece of heavy rubber dam which acted in lieu of clamps, and

about ten inches were cut away and end-to-end anastomosis made with sutures of Pagenstecher's linen thread in two layers. Owing to the necessary injury to the external leaf of the mesosigmoid there was a considerable area of tissue denuded of the peritoneum, and therefore a rubber dam drain was inserted down to this part, the remainder of the wound being closed in layers as usual. Recovery was uneventful, the patient leaving the hospital three weeks after the operation with a tiny granulating wound which closed very soon after.

In spite of the condition found at the operation this man remains well now, about a year after his operation.

The tumor examined by Dr. Mandlebaum of the pathological department of the hospital was reported adenocarcinoma, the same report having been made on the specimen removed at his first operation nearly twenty years before.

This case is evidently one in which two independent tumors were present. Possibly they were both there at the time of the first operation, though the sigmoid neoplasm had not yet degenerated into cancer—or perhaps as we may sometimes be able to say, become infected with cancer.

A similar case was reported by me before the New York Surgical Society², in which nine years after the removal of a non-malignant constricting adenoma of the hepatic flexure a cancer of the rectum developed from which the patient died.

An important paradox noted here in the radiography which demonstrated obstruction on examining the plate made from the barium enema, but showed nothing on observation of the colon some hours after the meal has been remarked by me in another case of stenosing carcinoma of the rectosigmoid. Probably in these cases, owing to the main direction of peristalsis, the stricture has become valve-like, permitting passage more easily downward than upward so that the enema is arrested while the meal passes.

NON-SURGICAL TREATMENT OF CANCER.

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What is cancer? Laboratory and other investigations have failed to answer the question, except to agree that it is a morbid disturbance of cells of the body which once were normal. But what is it that determines the development of certain of the cellular elements of the body into healthy or diseased tissue? It is the condition of the blood stream, influenced by a number of disturbing agencies, all working through what is known as metabolism. According as this is correct or deranged we have health or many conditions to which we give the names of various diseases. No one doubts that rickets is due to such a cause, nor does anyone question but that acute gouts result from a disordered state of the blood. Diabetes and lithaemia give rise to many other symptoms than those manifested by the kidney excretion.

The question now arises, what are the causes of a deranged blood stream? First must come erroneous eating and drinking, as shown in the case of rickets and gout. Next, faulty action of some of the organs of the body, induced in many other ways, which need not be entered on here, as they are familiar to all.

¹ N. Y. Med. Jour., Sept. 1, 1894.

² Annals of Surg., XLVIII, p. 307.

The blood is the life, and vast amounts of labor and patience have been expended, and many books written, on the character of the blood in various diseased states of the system, although not many years ago only ridicule was given to one who used the expression "bad blood." We certainly owe much to laboratory investigations: for recent works show very many and great changes in it in many diseases, including cancer.

But unfortunately most of the efforts have been in connection with the microscopic examination of the corpuscular elements of the blood, and very little attention has been paid to their chemical constitution or to the plasma. And yet this latter is of the utmost importance, as from it are derived the nutrient principles not only of the solid constituents of the blood, but also those of the entire system, about 8 per cent. of it being serum albumin and serum globulin. It also holds in solution the phosphates, carbonates, sulphates, and chlorides, the latter often varying greatly, and being chiefly responsible for the isotonic relation of cells and serum.

Unfortunately, also, most of these studies, as also those of the urine, and indeed most laboratory investigations, have been made in connection with cases of advanced cancer, when the metabolic disorder which led up to the tumor formation had existed long, and even when vital organs are involved by the disease, and so teach us little in regard to the true causes of cancer. What we need are more researches on pre-cancerous conditions of the system, and those belonging to the very earliest stages of the disease. For just as the earliest possible recognition of cancer as has been emphasized strongly in connection with its surgical treatment, so also the earlier these conditions are recognized and met by proper dietary and medical treatment, the better the prospect of success, as experience has taught me, during the last thirty and more years.

In speaking, therefore, of the non-surgical treatment of cancer this last qualification is to be borne well in mind. While in some instances it is possible to do very much for very advanced cases, by exactly the proper dietary and other measures, so that sometimes even recurrent lesions will melt away and metastases disappear, it is unreasonable to expect, with our present knowledge of this line of practice, to check the disease readily in the many cases now recognized as surgically hopeless, varying from 50 to 80 per cent. of all those affected. As early lesions in the breast, in which my experience mostly lies, may certainly be made to disappear and remain absent indefinitely, so it is hoped and believed that as the proper principles of living and medical treatment are recognized and applied, there will be a steady diminution in the morbidity and consequent mortality of cancer. And as scientific study proceeds along metabolic lines it is quite possible that primary cancer of internal organs, now so fatal, will share in the better understanding of its nature and cause.

Cancer, that is the localized tumor or mass which we recognize as such, undoubtedly begins in some particular locality as a local disease. But, as Ribert says, "no one has ever seen the beginning of mammary cancer," and no one knows just how the first change takes place from a normal to a malignant cell: and yet undoubtedly there is a time and cause of the same. But how does it occur?

The laboratory has excluded about every possible cause except faulty metabolism, and the more the reported findings along this line are studied and analyzed, the more evident does it appear that here will be found the solution of the very serious problem of the prevention

and cure of cancer, as I have shown elsewhere.¹ The agitation in regard to the very early recognition of cancer is most laudable, but an agitation to discover the basic cause which leads up to tumor formation is far more desirable. To merely attack or cut out the local manifestation of the disease, the tumor, while leaving the primal cause still operative, to produce new lesions or a recurrence, which so commonly occurs, seems about as sensible as to remove surgically, one after another, the late cutaneous or other lesions of syphilis.

Statistics have shown conclusively that cancer mortality is steadily increasing with the advance of civilization. Primitive people, living simple lives, largely on vegetarian products, are known to be almost if not entirely free from cancer, but as they mingle with foreigners and adopt their ways of eating and living, the disease appears more frequently in them.

All along the past one hundred years one may find repeated declarations in favor of a constitutional cause of cancer, largely based on dietary errors and violation of hygienic living. Such statements have been repeatedly made by surgeons and those who knew cancer well, and realized how relatively impotent purely surgical measures are to stay its increasing mortality rate, now reaching about 90 per cent. of those once affected: Lambe, Abernethy, Willard Parker, Sir Astley Cooper, Sir James Paget, Benecke, Esmarck, Oldehop, Sir Arbuthnot Lane and latterly William J. Mayo, have all spoken in no uncertain terms along this line of thought; but their views have received little or no attention, and the craze for surgery has seemed to blind the eyes of all.

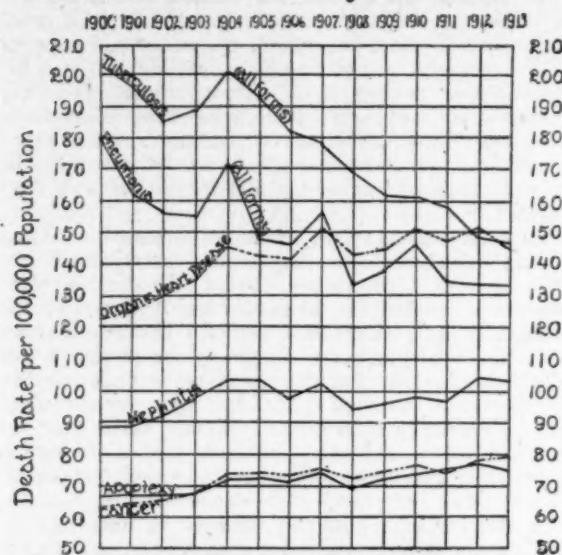
The actual details of the non-surgical treatment of cancer cannot be given in a brief article, they are often so complex and far-reaching in connection with faulty metabolism. There is, of course, no single remedy, nor ever will be, which will cure the disease; its very nature precludes this. Each cancer case is a study by itself, requiring careful attention to details in very many directions relating to every phase of life. An individual with an ideal metabolism will never develop cancer.

While a diet devoid of animal protein is the first requisite when cancer is threatening or has developed, this is hard to enforce for a long enough period, and many patients find it difficult to adjust it satisfactorily. There is need, therefore, that the physician should understand the subject well, and by constant inquiry and direction see that the patient takes a proper and sufficient number of calories, rightly apportioned in vegetable protein, carbohydrates, and fat: the latter may be largely made up by butter, of which a quarter of a pound daily furnishes 800 calories.

The medical treatment of cancer may be varied as are the possibilities of metabolic disturbance, and also cannot be briefly detailed. But all measures lie mainly along the line of securing proper assimilation and elimination. Long observation and innumerable quantitative analyses of the urine of cancer patients, which has been measured daily for weeks and months, show that the solids excreted in this way are always deficient in quantity, often being not one half of that required by the body weight of the patient; the urine is also commonly deranged in respect to the proportion of some of its many ingredients. A weekly complete volumetric analysis is therefore a valuable guide to the therapeutic measures which correct these errors.

Elimination by the intestinal tract is also found to be almost invariably at fault in cancer patients, even in the very earliest stages. So true is this that Sir Arbuthnot

From United States Mortality Statistics 1913



The mortality from organic heart disease, nephritis, apoplexy, and cancer has risen steadily since 1900. If we accept the fact that the increasing death rate of the first three is largely the result of modern civilization, especially from erroneous eating and drinking, it would appear that cancer is due to the same cause.

Lane has rightly remarked that one of the terminal results of intestinal stasis may be cancer. So universally common is this condition that it may be seriously questioned if the toxins produced by the millions of micro-organisms generated through intestinal stasis and fecal putrefaction may not be the real, incidental cause of the disease, through derangement of the character of the blood stream. This is a matter which should be very carefully attended to; it is not enough to give occasional cathartics, but by a most careful and repeated supervision to secure that there shall be at least one movement of the bowels daily, as near normal as possible. These may seem homely details, but as in the surgery of cancer minute attention to little things is essential, so in the management of the dietary and medicinal treatment success can be achieved only by the most exact attention to every item relating to the health and perfect functioning of the system.

Of the particular measures of service in the non-surgical treatment of cancer it is impossible to speak fully, for from first to last they may include a great variety of remedies. Alkalies are always of service, especially the salts of potassa, acetate, citrate and phosphate. Iron is commonly called for, in large quantities, and vegetable tonics and alteratives. Thyroid is often of value, and there is reason to believe that trypsin and amylopsin are of value, when used in connection with a vegetarian diet.

Locally much can be done by various measures, both to remove the morbid growth and even to benefit ulcerating surfaces. The x-ray and radium have certainly proved efficient in suitable cases, and thorium paste, when rightly used, is most valuable in modifying and removing diseased epithelial tissue, etc.

While surgery may have its function to perform in some cases of cancer, it has too long been a mistake to delegate the disease wholly to the surgeon, certainly unless suitable measures are adopted to overcome the constitutional tendency, which if left unchecked tends to reproduce its *local product*, the malignant new growth, in the scar or elsewhere, as so constantly occurs.

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SOCIAL PATHOLOGY AND CANCER.

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We are familiar with the fact that poverty bears a very definite relation to tuberculosis. We must become more familiar with the fact, as pointed out chiefly by W. Roger Williams, that vitiated prosperity bears a very definite relation to cancer. Cancer is least often encountered where the tuberculosis mortality is highest. The slum, compared with the best residential section, shows far less cancer than the latter, allowance being made for the disparity in population. Further, we believe that the matter may be narrowed down to certain classes among the poor and among the prosperous. Among the poor you have the woman who is indolent, physically gross, and with an indoor-cachexia. Among her class she represents the "womanly woman" if she has "brought up" half a dozen or more badly-behaved brats, kept up some sort of a "home," not become definitely alcoholized, and has observed the social conventions of her class. This is the woman who, among the poor, falls most often a prey to cancer after the menopause, in other words, at her most degenerative period.

Among the prosperous and highly "civilized" you find another type of "womanly woman"—so-called by her middle class—who represents another type of toad-like degeneracy. It is the most "respectable" and conventionalized woman of the prosperous class that cancer tends to single out. She eats a superfluity of food, leads a parasitic and reactionary existence, is flabby physically, sexually and intellectually, and in general typifies another kind of social pathology. Not less than her poor sister she is a deplorable instance of humanity run to seed. She is an effete product of our highly geared civilization, equally with her poor prototype. That her life shall be passed in the way that it is ordained for her by those responsible for our smug social standards and more or less passively accepted by her. She is interesting only as a pathological exhibit. Her vegetative life engenders physical degeneration directly. She is a domesticated animal in the worst possible sense. That she should, after her years of hyper-nutrition, finally go to seed in a special field of pathology is almost inevitable and not at all mysterious. She virtually trains for cancer. Society confers a respectability upon her which is her greatest curse. She is *par excellence* the "womanly woman" whom sentimentalists hold up to us as a goddess. This "lady's" logical place is in the home (for cancer).

The conditions of life which we impose upon our women and which excite the greatest ire of the feminists involve penalties which can be expressed in terms of physical degeneration not less well than in terms of moral, intellectual and social degradation.

We are not in the habit of relating our smug conventions to disease, even vaguely, but the relation exists and is real. We have only begun to discuss the more obvious disease reflexes of social pathology. But the subtle reflexes are equally vast and ramifying, and even more interesting.

Not loosely connected with the woman's movement is the question of cancer in so far as it is a reflex of the low social position of many members of the sex, arbitrarily ordained and sanctified by the tradition of respectability and its smug sponsors. Yet few would seem to have dreamed of this connection, definite as it is, though subtle.

The elimination of that holy horror, the "womanly woman," is most desirable from a medical as well as from other standpoints. Relative freedom from a loathsome disease is surely as much of a desideratum as any other sort of freedom postulated by the feminists. What good is their freedom if it is not inclusive of the kind which we hope we have suggestively and profitably discussed?

115 Johnson Street.

CANCER OF THE BLADDER.

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In approaching the subject of cancer of the bladder I do so with a good deal of hesitation, for in most topics in genito-urinary surgery the method of procedure is definite and clearly formulated and in the important points surgeons are all in accord as to what should be done and how to do it, but in cancer of the bladder it is not so. There is much confusion and much disagreement as to the proper methods, which are to be used in general and the particular methods in a given case.

To account for these varying opinions there are several reasons. The location, length of time of existence and amount of involvement of the tissues in every case of bladder cancer are elements which must be considered in order to make the diagnosis, either for operative purposes or otherwise. Individual judgment and experience come into play here, for there is no formal line of procedure laid down as in the surgery of the prostate and kidneys, but each case has to be decided on its own merits.

The diversity of opinion as to whether a bladder cancer should be operated upon by the most radical method or left entirely alone until the patient's suffering calls for relief by establishing a bladder fistula, or even keeping the urine away from the bladder entirely through a double nephrostomy, or whether the mild and not very successful methods of radium or fulguration should be employed, must all be tried out and fitted to individual cases. It will be certainly five or even ten years from now before our procedures become definitely standardized, and even then it will depend largely on the size, character and location of the tumor in the bladder, the extent of tissue involvement, age of the patient and state of his kidneys and general strength as to what may be attempted to give him relief.

A word as to diagnosis.

Every bladder tumor, even though non-malignant histologically, is potentially lethal, for every simple papilloma becomes transformed into a malignant tumor in time or kills the patient by constantly recurring and continuing hemorrhages or an ascending pyelo-nephritis. There are practically no symptoms of bladder tumor until the bleeding begins and a painless intermittent hematuria at first which later becomes more or less constant, is the danger signal which is held out in every case.

The diagnosis of bladder tumors can only be made by cystoscopic examination and a differentiation between simple papilloma and carcinoma can only be decided by the microscope, although an experienced clinician can very often make a shrewd guess as to the nature of the condition from the clinical findings.

Let us now pass to the operative methods of treat-

ment in malignant or cancerous tumors of the bladder. Formerly the ordinary method of operation for removal of the cancer was a suprapubic cystotomy and removal of the growths by twisting them off with forceps, or, if multiple, scraping them with a curette. In many cases these crude surgical attempts were followed by urosepsis and speedy death. If this unfortunate occurrence did not follow in the wake of the operation the growths always recurred and death occurred at a later period.

An improvement in the technique consisted in cutting through the pedicle or the mucous membrane at the base of the bladder by an incision. In this way urosepsis was avoided, but the percentage of recoveries was practically no greater than before. Instead of using a simple incision, the destruction by the actual cautery of the base of the tumor, using either a Paquelin electro cautery or the high frequency Oudin current, made the prognosis as to recurrence slightly better, but not brilliantly so. The application of radium through a suprapubic cystotomy is too new, untried and uncertain to place very much dependence upon it.

These various operative attempts by incision into the bladder often converted a sluggish process into one of activity and stimulated the growth of the tissues infiltrated by cancer cells. The suprapubic wound would sometimes fail to close and the patient would suffer with the discomfort of constant leakage from the suprapubic fistula.

Recurrence took place in all the cases, usually in the bladder, but occasionally in the suprapubic wound itself and is explained by a transplantation of cancer cells accidentally brushed off from the tumor during the process of removal.

In all the above-described operations the bladder wall itself was not excised, but only the tumor with a part of its underlying mucous membrane.

These incomplete operations undertaken with the hope of cure were almost always unsuccessful, so much so that many of the surgeons with the largest experience, particularly in Europe, came to the conclusion that it was better to leave the cancer of the bladder cases without operation and that by abstaining from operation the patients would live longer and suffer less.

This European view was well formulated by Cathelin, who states that opening the bladder is only justifiable in:

- (a) Neoplasms involving the dome or front.
- (b) Budding neoplasms whose offshoots clog the neck of the bladder like the stopper in a bottle and cause retention of urine, and
- (c) In neoplasms causing hematuria where hemorrhage makes intervention necessary.

In all other cancers of the bladder it is considered better to abstain from intervention, especially where the tumor involves the floor or is located around the ureteral orifices.

In the final stages of hopelessly inoperable cases where the patients are suffering from bleeding and retention of clots which cause tenesmus and strangury, intense pain every few minutes and exhaustion from want of sleep, it is proper to employ one of the palliative operations for drainage solely for the purpose of relieving the symptoms and making the patient comfortable. The choice here would lie between a suprapubic cystotomy with a permanent fistula for the purpose of keeping the bladder empty and putting it at rest, and a double nephrostomy, as advised by Watson, to divert the urine away from the bladder entirely. By one of these operations the last months or weeks of

the patient's life may be made at least bearable until the exhaustion from the cachexia and bleeding, or extensive metastasis in other organs cause the almost-to-be-welcomed exitus lethalis.

The hopeless character of the disease has caused diligent search for relief among the surgeons. The two methods of fulguration and radium are now on trial. Fulguration by the Oudin current is the ideal method of treatment for the non-malignant growths in the bladder, but is practically useless in carcinoma as a curative agent, its sphere being limited to checking hemorrhage and retarding the progress of the growth. The action of radium is too uncertain and not sufficiently worked out as yet for us to speak with much definiteness. A few cases have been reported as cured by its application through a suprapubic fistula. In one of my own cases where I tried it, it was absolutely without result.

Such being the outlook in regard to the hopeless character of bladder cancers, any procedure holding out a hope of cure is seized upon with avidity and tried out thoroughly.

The objection to the above-mentioned semi-radical operations is that they are not sufficiently complete to remove the cancerous growth entirely and they were generally attempted too late after the lymphatics had already become involved so that they were nearly always followed by a recurrence.

With these facts in mind in very recent times, surgeons have been instituting operations of a more radical character consisting in an excision of the entire bladder wall for a wide area around the base of the tumor. A fairly large proportion of actual cures without recurrences have been obtained, but the success of such procedure depends most largely upon the location of the tumor. An ideal case for such an operation would be one in which the tumor was located in the front of the bladder or at its dome. Here it is possible to reach the tumor easily and the entire thickness of bladder wall can be excised without interference with the ureters. Unfortunately tumors are rarely so favorably located, for they are usually in the trigone or impinging on one of the ureter mouths. To handle these growths successfully demands free exposure of the bladder and transplantation of the ureter in a new portion of the bladder after excision of part of its wall. Many of these procedures are facilitated by the transperitoneal approach as originally suggested and practised by Judd of the Mayo Clinic, but any of the radical operations to be of use must be undertaken early before the extensive involvement of the parts, and this means an early diagnosis by the family medical adviser. The general practitioner should bear in mind that every case of hematuria demands an immediate cystoscopic examination and if the hematuria is caused by a bladder cancer, an early diagnosis with prompt removal affords at least a possibility of saving the patient's life. If the hematuria is neglected for months and the diagnosis is finally made after extensive involvement of the bladder tissues, the time for operative interference has passed and it is possible that the patient's life has been sacrificed by the negligence or indifference of the medical man whom he first consulted.

32 Schermerhorn St.

That the bacillus coli occurs normally in the spleen seems to have been proved in a series of autopsies recently, when the organism was found present in all the spleens examined.

THE PROBABLE VALUE OF BACTERIAL VACCINES AS A PROPHYLACTIC TO CANCER.

G. H. SHERMAN, M. D.

Detroit.

The death rate per thousand population from cancer is steadily increasing in most parts of the country in spite of the fact that modern surgery is being more generally applied in the treatment of this disease than ever before. In the May 22, 1915, number of the *Bulletin* of the Chicago School of Sanitary Instruction, after giving tabulated statistics of deaths from cancer says: "The reality of the actual increase in cancer death rate has been questioned from the standpoints both of statistics and of diagnosis. The above tabulation, showing clearly that the rates are steadily increasing at every age, would seem to prove the increase statistically 'to the hilt'." This certainly does not indicate that the disease has been brought under control, either in the way of prevention or cure.

The etiology of this disease has been most carefully studied during the past decade by animal experiments, problems of nutrition, chemical irritation, etc. That long-standing irritation is a predisposing cause of cancer has long been recognized but the question of chronic infection by the common infecting organisms as an essential etiologic factor has only been receiving serious attention during the past few years. Lawson, (*Journal Nat. Med. Assn.*, January-March, 1915) after reviewing the work of various investigators along this line, sums up the situation in part thus:

1. That apart from the sexual organs 86 per cent. of all cancers occur in the alimentary tract.
2. That long standing chronic inflammation in the sexual organs, and in other parts of the body, is known to predispose to the development of cancer.
3. That the great majority of persons suffering from cancer in the alimentary canal have pyorrhea alveolaris which has been present many years.
4. That this periodontal disease is not nearly so common in persons not suffering from cancer.
5. That "pus-eating" brings on gastritis.
6. That the majority of cancers of the stomach show a history of chronic gastritis of many years' standing."

If these deductions are correct, there is not much room for doubting that chronic infection is a primary factor in the development of cancer. As a constant irritant to tissue cells, no other process has its equal. Even where mechanical irritation is a primary factor, infecting organisms are usually present and aggravate the process.

From this viewpoint, the elimination of chronic infection as a measure of preventing cancers should be constantly kept in mind. All infections have an acute beginning and from an extensive experience in the use of bacterial vaccines in acute localized infections by the common pyogenic organisms, I am confident that if vaccine therapy were employed as a routine in their treatment practically none would lapse into a chronic condition. And, even in chronic cases, where the vaccine treatment is persistently followed up, good results are obtained in a large majority of cases.

A great many doctors make the mistake of using vaccines as a last resort and if marked visible results are not obtained at once, question their therapeutic value. Chronic pyorrhea seems to be the most common infection associated with cancer but comparatively few

cases are being treated in the early acute stages with vaccines. Many times physicians wish to try out the use of vaccines in cases where the teeth are loose, the alveolar process mostly destroyed and pus pockets around the roots of the teeth. Failure in such cases can not be ascribed to the inefficiency of vaccines. The same rule holds good with other chronic infections.

Well meaning doctors often criticise the use of vaccines in the treatment of acute minor infections on the ground that most of these infections will subside spontaneously or, at all events with local treatments. The extensive prevalence of localized chronic infections is sufficient reply to such criticism. It is about time we realized that every infection is associated with some danger and that every means at our command should be employed to get rid of the infection early.

Of all the therapeutic agents at our command in dealing with infections, bacterial vaccines are the most efficient and the least harmful. Since irritation seems to be an all important factor in the development of cancer, it would appear that the irritating effect of most antiseptics employed in the treatment of localized infections may be a harmful factor. No such danger is associated with the use of vaccines. The therapeutic effect of a vaccine consists in stimulating tissue cells

for the production of specific enzymes or antibodies which have a destructive influence on the infecting organisms. When tissue cells have once acquired the faculty of producing specific enzymes, they continue to do so for some time after the organisms contained in the injected vaccines have been disposed of and for this reason, the immunizing influence becomes permanent. Furthermore, it requires but a very small amount of a killed bacterial suspension to sensitize tissue cells for enzyme production. The bacterial content of an average dose of vaccine weighs less than 0.00035 grain, certainly not a dangerously large amount of a foreign protein to inject. This dose is so small that anaphylaxis or severe reactions is impossible.

When the possibility of preventing cancer by avoiding chronic infections by means of vaccine therapy is once thoroughly realized, vaccines will be generally employed in the so-called trivial inflammatory processes and by this means will not only serve as a prophylactic to cancer but will at the same time obviate the danger of the germs gaining entrance to the blood current and developing centers of infection in remote parts of the body as well.

3334 Jefferson Avenue E.

The Effect of Moving Pictures on the Eyes

THE EFFECT OF MOVING PICTURES ON THE EYES.

J. NORMAN RISLEY, M. D.,
Philadelphia.

Humanity, since its genesis, has ever been dominated by an insatiable longing for amusement, and throughout the centuries of the world's progress, this characteristic has developed to such a degree that now it has become an integral motive force in all the activities of mankind. Indeed, who can say that the necessity for securing the means to gratify this craving has not been the basic factor stimulating the creative and constructive forces of man to the achievement of the many marvels of science. A curious feature of this characteristic trait is, that the maximum of pleasure seems usually to be obtained from an indulgence in those forms of amusement which ultimately prove harmful to both physical and moral standards.

Particularly is this true of those individuals who as consumers only of the world's products, obtain the means for existence solely by a continuous mental activity which enables them to outwit their competitors in the same line of endeavor. The unceasing strain of such mental tension and effort, without the relaxation afforded by physical labor, must ultimately result in a nervous system at such a high pitch that it will not permit recuperation of the depleted energies by normal quiet rest. The individual, however, must have some diversion from the cares of the business day, but his exhausted nerve forces can be satisfied only with those amusements furnishing the maximum of physical stimulation and mental excitement.

Of the many varieties of entertainment that human ingenuity has devised, none has attained such widespread popularity with rich and poor alike as the motion picture. To appreciate the firm hold that this form of amusement has secured upon the general public, it is only necessary to realize the significant fact that the fifteen thousand motion-picture theatres in the United States have a daily average attendance of ten

millions, or one-tenth of the entire population. That an institution capable of arousing and maintaining the interest of so large a proportion of the people of this country must exert a powerful and far-reaching influence upon their character, is beyond question.

With a realization of the influence exerted by the motion picture on public morality, many states originally, and later the Federal government, enacted statutes prohibiting the releasing of films for public exhibition without the signed approval of an authorized board of censors.

The advantage of such supervision for safeguarding general morality is indisputable; but it is of equal importance to protect public health by periodic and systematic inspection of the hygienic conditions of these theatres, and the establishing of a fixed standard to which they must conform. Nowhere in the country is such a regulation in force, except in the City of Chicago. The majority of motion-picture theatres occupy either the ground floor of old buildings that have been remodeled for the purpose, or new buildings constructed merely with a view of producing an exterior, attractive to the public and conforming to the specifications of the fire underwriters, at the lowest possible cost, with but little, if any, consideration given to hygienic conditions or adequate ventilation. Since the entrance fee to this class of motion-picture theatres is usually five or ten cents, the clientele attracted must, of necessity, include that class who are most likely to be the carriers of contagious disease. Formerly, when the pictures were of a kind that could be shown in from twenty to thirty minutes, the audience changed frequently; but since the film reproduction of popular novels and plays has become vogue, requiring from one to three hours for display, the prolonged exposure to an atmosphere deficient in oxygen, with an associated excessive stimulation of the general nervous system, must be productive of a marked anaphylaxis, thus favoring a ready absorption of contagious or infectious micro-organisms. However, owing to the increasing popular demand for more

elaborate productions, which can be produced only at tremendous expense, the exhibiting branch of the film industry has realized the necessity for increasing the admission charge; and that, in order to persuade the public to accept this charge, it must offer attractive and comfortable surroundings. For this reason, there is now a growing tendency to build permanent structures, and more attention given to the insurance of safety and comfort.

I am indebted to Mr. F. W. Buhler, of the Arcadia Theatre, Philadelphia, for affording me the opportunity of a thorough inspection of this most up-to-date building, recently completed, at a cost of \$150,000 and on a property assessed at \$525,000, making a total investment of \$675,000, for the exclusive exhibition of motion pictures. This little theatre seems to me to have almost attained the ideal environment in which to enjoy the motion picture. The seating arrangement at present, adds greatly to the comfort of the audience in its individual spacing and is far below the maximum capacity of the auditorium; the decorations are quiet and soothing; the ceiling is exceptionally high; and the darkness, usually a characteristic feature of such places is eliminated by an invisible, soft, diffused light, which in no way interferes with the details of the pictures. The Sirocco system of ventilation, in which the poisoned atmosphere of the auditorium is exhausted by electric fans, and purified by being forced through an aqueous mist formed by numerous broken sprays of water, is employed; and the atmosphere of the whole room is completely changed every eight minutes.

The elements existing in the present process of displaying motion pictures which are most likely to be the source of irritation to the delicate structures of the eyes are, "flickering" or vibration and inaccurate and variable focusing of the pictures, also the relation the light reflected from the screen bears to the visual plane of the observer. To a normal visual organism, the undue effort required of the combined accommodative mechanism and co-ordinant muscular action to maintain distinct binocular vision of the rapidly changing succession of vibrating images in varying degrees of focus, associated with prolonged exposure to the irritating stimulus of directly reflected rays from a powerful electric arc, may result in a hyperemia of the ocular vascular tissue and reflex discomfort. However this probably soon subsides after the undue effort has ceased and the eyes suffer no permanent injury. By normal is meant a visual organism in which there is a perfect performance of the physiological function of the afferent ocular nervous system and cerebral perception-centers, an anatomical formation of the eyeballs and their component structures permitting of an accurate focusing of all parallel light rays from infinitely on the retinae with the accommodation mechanism at complete rest, and an arrangement and co-ordinate action of the extrinsic ocular muscles affording an absolute fused binocular image without the necessity for undue effort by any individual muscle or group.

Unfortunately, however, eyes with a defective refractive mechanism are far more common than is the ideal type, just described.

In view of this fact it becomes necessary to choose that refractive error which is of most frequent occurrence for a standard by which to judge the extent of harmful influence exerted upon the eyes by the motion picture exhibition. Hypermetropia (far-sight) associated with astigmatism is acknowledged to be the most common defect and when present in moderate degree is often the principal etiological factor of innumerable reflex neuroses. Being due to an insufficient antero-posterior diameter of the eyeballs and with associated irregularity in the curvature of the corneal meridians, parallel rays of light entering the eyes from infinity can be accurately focused on the retinae only by the compensatory action of the accommodative mechanism.

The individual with such an error is, during every waking hour, in his effort to secure distinct distant vision, consuming the energy of an organism that should normally be employed only when the eyes are observing near objects. This continuous abnormal action of the accommodative mechanism, even in the ordinary routine of life, must be productive of an increased vascularity of the choroid and retina, varying in degree from a hyperemia to a congestion proportionate to the amount of energy expended.

If this individual now subjects his eyes to the additional accommodative strain and irritative influences of the direct reflected rays projected by the motion-picture lantern, with a retina and choroid already hypersensitive and congested, he can hardly escape the ocular discomfort, headache and many other reflex neuroses caused by "eye strain."

Should this refractive error be associated with an imbalance in the co-ordinant action of the two eyes, the muscular effort required to maintain fused binocular vision, combined with the abnormal accommodative strain results in a visual organism markedly susceptible to the irritative influences of the motion picture.

The individuals possessing abnormal conditions of their refractive mechanism who probably enjoy the greatest immunity from discomfort and injury resulting from exposure to the irritating effects of motion pictures are those who are unable to obtain normal visual acuity by any effort of accommodation or convergence, such as myopia, excessive degrees of hypermetropia and astigmatism, and absence of binocular vision.

It is needless to detail the many constitutional and ocular pathological conditions susceptible of increased activity through the stimulation to the delicate vascular and nervous organism of the eye, produced by exposure to the intensive light irritation of the motion pictures, since diseased tissue is proportionately susceptible to injurious effect.

It seems to me that the motion picture exhibition in its effect upon the eyes can be classified only as an additional irritation and stimulation to the numerous others characteristic of the tense and active neurotic life of the period. It is, as a rule, only those individuals with uncorrected optical defects, or pathological organic changes, who experience discomfort or injury from the irritating features of the motion picture, which then are only the exciting factor in the crisis resulting from a long standing predisposing cause. The influences of the motion picture often work for the individual welfare, since in many instances, the existence of an optical defect is unknown until subjected to strain in viewing these projected images. The irritating features are possible of elimination by a more accurate mechanism regulating the relation between the condensing and projecting lenses, more care in the selection of the glass

used, and in the grinding of the lenses, and a scientific understanding of optical principles by those who are responsible for the placing and operating of the projecting machines. The most irritating feature to the eyes is the exposure to the direct reflected rays, and this condition should be remedied. As municipal regulation forbids the placing of a stationary structure in a public auditorium in a situation where it may interfere with rapid exit when emergency arises, it prevents the installation of the picture instruments at a point from which it is possible to project the pictures to the screen on a horizontal plane.

Would it not, however, be possible to locate the projecting machines in the basement at a central point to the rear of the audience, and have an open avenue in the floor through which the pictures could be projected to the screen on an ascending plane of sufficient degree to reflect the rays above the visual line of the audience and thus remove a most irritating feature of an otherwise pleasing and interesting diversion?

2026 Locust St.

MOVING PICTURES NOT HARMFUL TO NORMAL EYES.

J. HERBERT CLAIBORNE, M. D., F. A. C. S.
New York.

I have been asked to give my opinion about the effects of the movies on the eyes. I do so gladly.

In the beginning when the movies were new, their mechanism and photography were not as good as at present, and it is safe to say few people visited them and remained any length of time, without suffering some ocular discomfort. Latterly, however, there has been great improvement in every particular. The photography is better, the successive pictures are placed more closely together, the focusing is more accurate and the man who runs the stereopticon machine is acquainted with its technique. There are now lacking the bad focusing, the shaking, jerking, unsteadiness, white gaps and the effect of unrest and disorder which formerly existed.

In order to see the movies best I think one should sit quite far back in the theatre, in the dark, and have the line of vision of the eyes as nearly as possible at a right angle to the surface on which the pictures are thrown. In short, the best position in the theatre is in the middle and far back. When one sits to the right or the left, a lengthening of the figures is produced and a distorted idea of proportion and distance is obtained. If one sits too near, the illumination is too intense.

The length of time spent in looking at the movies is a very decided factor in the effect upon the eyes. One hour to an hour and a half is quite enough for the continuous observation of a series of pictures, and relief should be given from the intense ocular concentration by the introduction of other numbers such as singing, instrumental music or vaudeville in which colors are not involved. The managers of the movies have already taken advantage of these ideas and in a number of the theatres in New York the pictures are interspersed with some other form of entertainment.

I think the Strand Theatre by reason of its size, comfort, and its peculiar adjustment of lighting, together with other improvements, gives the most pleasing and least fatiguing exhibition I have seen.

A great many people have told me the movies hurt their eyes, but I have never known anyone to make that complaint who did not suffer in some respect from ocular irritation, whether it was due to swelling of the lids,

congestion, actual inflammation of the eyeball, or the need of glasses to properly correct their refractive error.

At present I feel sure that anyone with thoroughly sound eyes, not weary before entering the theatre, can watch the movies from an hour to an hour and a half without discomfort, and even if any discomfort is experienced, it will be only fleeting.

From this it can be drawn that all those whose eyes are in above mentioned conditions should avoid the movies until the trouble is corrected.

Most theatres have their lights turned well down when the pictures are on. Some, however, do not; but it should always be done. Any light that is allowed to remain should be behind the heads of the audience. It is well to refer to this matter, not only from the standpoint of the observer, but also from that of the actors who furnish our amusement. One reads from time to time in the daily papers a dramatic account of how this or that actor was blinded while acting for the movies, particularly when some brilliant light was turned on the eyes. I have not come in contact personally with any of these cases, but I have followed such instances in the papers, and have subsequently found that those who had been injured had recovered.

There can be no doubt that considerable ocular irritation and possibly the production of temporary scotoma may be produced by a prolonged exposure to the brilliant light in which these actors sometimes move. One sees frequently a picture of the villain, within a small circle, with an intensely brilliant light thrown on his face. This is very catchy and attractive to the people, but it is hard on the actor. It must be more or less painful at the time and surely is productive of no good. In my opinion, all focusing of brilliant white light, or any one of the colors, directly upon the face of an actor should be avoided. I do not think it reasonable, however, to believe that anyone's eyes are being materially damaged or that sight is being destroyed either in the making or the exhibition of these pictures. I believe actors may rest content on this point.

I think the pictures should be restricted to the acts of real men and real animals and the movements of actual things. Those artificial films which are made by a free hand drawing of men and animals and are thrown upon brilliant white surfaces are very irritating to the eyes, far more so than the pictures which are taken from real life.

The movies have come to us to stay and I consider them a source of interesting, instructive and innocent amusement, economical to the last degree. Moving pictures are the only good things I know of in this world that everyone likes, that cost little and give great pleasure. This is what men have been looking for for all time, and I think they have found it at last; but the most important feature of the movies, and we are gradually coming to recognize it, is the educational one. It is to be hoped that in the future many, if not all, of the historical events of this country will be presented, without prejudice, for the instruction particularly of children and likewise of us all.

If one is to believe current opinion, the movies have attracted a number of city men from the bar rooms and grog shops and have furnished much pleasant and innocent amusement to which they possibly may have been more or less strangers.

The National Board of Censorship keeps the moral tone of the pictures within the proper limits.

The exhibition of these pictures will doubtless be

achieved in the future with greater ease and less strain upon the eyes of the actors who produce them and the public who visit them. I believe that great libraries, or depots, will be established, for the storing of the films whereby coming generations may be instructed in the manner of thought, life, action and in the great deeds of their ancestors. From my standpoint, long live the "Movies!"

NO ORGANIC EYE CHANGE IS CAUSED BY MOVING PICTURES.

J. MORRISON RAY, M. D.,
Louisville, Ky.

While I am interested in the effect of moving pictures on the eyes, I have not as yet had an opportunity to study the subject in its scientific aspect.

After witnessing moving pictures for an hour I realize that I am suffering from eye-fatigue and I have discomfort for some time afterwards. I have observed others who suffer similarly, but I have yet to see any organic change in the eye that could be definitely traced to the moving pictures.

I assume that the entire condition is one of retinal tire due to the constant changing of the image on the retina. I notice that I suffer in a like manner but in a lesser degree, when I look out of the window of a moving train.

THE GOOD AND BAD EFFECTS OF MOVING PICTURES ON THE EYES.

SETH SCOTT BISHOP, M. D., LL. D.,
Chicago.

Although moving pictures are proving to be a blessing to the great masses of the people of moderate means, and especially to those who are deprived of the sense of hearing, they exact their penalties.

These penalties, undoubtedly, will largely disappear as the industry of producing and exhibiting the films becomes more perfect, for the art is in its infancy.

One very serious objection to the manner in which the pictures are projected upon the screen is the presence, in some of them, of innumerable glimmering, flashing and dancing bright spots that try the eyes, like exaggerated muscae volitantes. But these do not characterize the best class of pictures, which shows that they can be eliminated.

The effect of very bright and rapidly changing light upon the retina is comparable to that of loud, discordant sound waves upon the auditory nerve—irritating. Loud harmonious sounds, like some of the surprising passages from a Wagnerian overture, do not irritate, but the hammering of boiler makers produces a high degree of deafness. Generally, however, the lights employed in the moving picture theatres are not an important factor in causing eye strain.

Another feature which puts a severe test upon the eyes is the unnatural swiftness with which the films are reeled off, making every action abnormally rapid and jerky, converting the actors' walk into a Chinese trot and giving all the participants a sort of St. Vitus dance.

But the common practice of flashing written letters and printed matter on and off the screen with almost lightning celerity puts the greatest strain of all upon the eyes. The audience, in its eagerness to get an intelligent understanding of the action, makes a strong effort to read the lines, but they are given no opportunity to read all of them in many instances, and are kept on

a strain in the strenuous effort to grasp them at a fleeting glance.

It is difficult to understand why the film operator indulges in this mismanagement of his machine, for the same operator who gives an audience a chance to read only two or three lines out of many, often throws a single line on and leaves it on view long enough to be read many times over. The mechanism of accommodation of the eyes is perceptibly strained by this practice.

It is evident that such imperfections and exasperations are within the possibility of elimination; and it remains for the medical profession to point out and emphasize the damaging effects not only upon the eyes but upon the nervous system as well. As many moving picture shows are now mismanaged, they are the best places for people who are not possessed of the strongest eyes and nerves to avoid.

On the other hand, the better kinds of these exhibitions are a charming diversion and amusement. They relieve the tension of the mind for those who stand in need of it, and they sometimes provide actual instruction in the various arts and sciences. The "weekly news pictures" of interesting and important events from all over our country and other parts of the world add to our store of knowledge and breadth of mind.

Another effect of watching moving pictures, worth mentioning in this connection, although it is not injurious to the eyes, is a pronounced hypnotic experience that many people have, particularly when the performance is prolonged to more than one or two hours and is not of a very exciting nature. The drowsiness that comes over some of the audience is so complete as to induce a loss of consciousness in sleep for short periods of time in spite of every effort to keep awake, even in well ventilated theatres. This is comparable to the effect of gazing fixedly at a bright object, which is employed by hypnotists to tire the muscles of the eyes until a hypnotic state is brought on.

Headache sometimes follows attendance upon these shows. This may be due to, first, eye strain, and, second, air that is vitiated through want of proper ventilation, for some of the small and cheap class of picture theatres are vile tunnels. In contrast to these, many of our best halls and finest modern theatres stage these amusements in the most healthful and artistic surroundings.

While it might not be considered germane to the subject under consideration, it is worth while to note what a real blessing moving pictures are to deaf people, and more particularly to those who are lip readers, for they get far more out of the acting than do those who have good hearing. Experts, like Florence D. Kelley and Gertrude Torrey, acquire such proficiency that they are able to understand the spoken language as they watch the mouths of the actors and follow the train of thought, as those who have unimpaired hearing follow the words in the ordinary theatrical performance. But these lip readers have cultivated and acquired intense power of concentration of thought. They glue their eyes to the speakers' mouths, as it were, during the whole play. One can readily understand, therefore, that the strain upon their eyes is intensified, and, unless the pictures are produced and projected with consummate art, the eyes must suffer.

The following incident will serve to illustrate the foregoing statement: A contingent from a society of lip readers attended a moving picture show together. In the midst of the performance they all arose and left the theatre, much to the surprise of the rest of the audi-

ence. This was the reason: When the actors were playing their parts in producing the films, not thinking that any one would ever know what was said before the camera, they indulged in vile and obscene language. The lip readers easily recognized the words, in consequence of the deafness to which they were doomed, and registered their indignation and condemnation of the players. Let scenario actors beware.

THE EYES AND MOVING PICTURES.

DUNBAR ROY, M. D.

Atlanta, Ga.

As to the effect of moving pictures upon the eyes, I have no clinical data and must therefore express myself purely from the standpoint of personal observation. The question as to what effect does the frequent observation of moving pictures have upon the eyes is very much like the question as to what effect does the eating of cabbage have upon the digestion. The answer of course is that it affects different individuals in different ways. This same law holds true throughout the realm of medicine. Medicine as yet is not an exact science and probably never will be and for this reason we cannot lay down fixed rules to govern every individual. To say that cabbage is indigestible is not a true statement of the fact. It may be for one person, yet there are others for whom it is digestible.

The same is true of the effect of moving pictures upon the eyes. Each individual is a law unto himself and he must determine whether his eyes can stand this kind of amusement. To say that moving pictures are universally harmful to all eyes is certainly not correct but that they are harmful to certain individuals must be admittedly true. As a proposition, knowing something of the mechanism of moving pictures, we must admit that

they would certainly seem somewhat injurious to almost all eyes but their effect varies according to the innate condition of the eye itself. Many people naturally have weak eyes, i. e., they are easily affected by the glare of lights, lachrymation on the slightest provocation, become red and congested easily and frequently have some uncorrected error of refraction. The fact that certain people wear glasses is self evident that their eyes are not normal. Such people must naturally be affected by the kaleidoscopic changes as one sees on the films of moving pictures.

Retinal irritation and retinal fatigue are certainly symptoms produced on a great many people who watch these films. The exercise of the retina might be compared to rapid contraction of the muscles in exercise. Long continued and rapid contractions will soon lead to fatigue. There are a great many men who can smoke six or eight cigars a day without any injurious effect upon their physical constitution and yet we know others who will be highly affected by the smoking of one. This principle holds true in the effect of moving pictures upon the eye. When a person realizes that his or her eyes are fatigued, burn, become red, water easily, ache and possibly have a dull frontal headache after watching a moving picture performance, it is rather indicative that to these people such amusements are injurious to the eyes. We must, however, take into consideration the presence of a vitiated atmosphere which is also productive of fatigue symptoms. If my advice was asked I should say "study well your own eye symptoms before and after witnessing a moving picture performance and your own symptoms will tell you whether or not the same is injurious to your eyes." As to the morals taught, in the large majority of cases they are not the places for a minister's son.

General Scientific

ABSTRACT OF A PRELIMINARY REPORT ON THE CONNELLAN-KING DIPLOCOCCUS INFECTIONS OF THE THROAT.*

JAMES JOSEPH KING, A. B., M. D.,

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CHIEF-OF-CLINIC, EAR, NOSE AND THROAT, GOVERNEUR
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NEW YORK EYE AND EAR INFIRMARY.

New York.

CASE I. A physician first seen on November 27, 1914. He complained of sore throat and pains over the body. Temperature was 105.6° F., delirious, and in a severe chill. Both tonsils had the appearance of a follicular tonsillitis. He was exceedingly toxic. Urine had albumin, hyaline and granular casts. Culture from the tonsils showed a Gram negative diplococcus which has since been called, for lack of a better name, the Connellan-King diplococcus. His nephritis, slight elevation of temperature and toxic appearance persisted until he received three injections of an autogenous vaccine.

CASE II. A physician in Atlantic City. In April, 1914, he had a mild tonsillitis which was apparently well after a few days local treatment. In June, 1914, he became afflicted with arthritis of ankle and knee, myocarditis, endocarditis and nephritis. The urine had albumin, hyaline and granular casts. He was confined

to his bed altogether for a period of twelve weeks. In the fall of the same year he was able to get around, but was not considered well by his physicians. In December, 1914, the Connellan-King diplococcus was found in pure culture in his tonsils. He was advised that the infection of the tonsils was the cause of all his trouble; that it should be cleared up, and the tonsils should be enucleated. This was done, and since his recovery from his tonsillectomy he has been perfectly well.

CASE III. A lady from Nashville, referred to me by Dr. Virgil P. Gibney for treatment of a sore throat and cold in the head. The Connellan-King diplococcus was isolated from the tonsils. She returned to her home before the vaccines could be prepared, and her physician, Dr. Perry Bromberg, informed me that she declined the use of the vaccines.

CASE IV. A Baltimore lady, whose chief complaint was a severe asthma following a mild tonsillitis and pharyngitis. The same diplococcus was isolated from her tonsils. The asthma was of the most severe type, and ordinary treatment had practically no effect upon it. She became quite comfortable after one injection of autogenous vaccine, being able to lie down and sleep for the first time since the asthma attacked her. Two more injections of the vaccine cleared up all asthmatic symptoms. No recurrence up to the present time.

CASE V. A clinic patient at Governeur Hospital, a boy of fifteen and a half years of age, the appearance of whose left tonsil, together with a left cervical aden-

*Presented before the Laryngological and Rhinological Section of the New York Academy of Medicine, March 24, 1915.

itis and general toxic condition led to a tentative diagnosis of sarcoma of the tonsil. This opinion was concurred in by Dr. W. W. Carter, who asked to see the patient. Wassermann reaction was negative; tuberculin test was negative; and a section of the tonsil was reported negative for malignancy by two competent pathologists. The bacteriological examination of the tonsil revealed the Connellan-King diplococcus, and a few streptococci viridans. He is receiving autogenous vaccines with marked improvement.

Eleven other patients with various symptoms were reported. In all the cultures were made from the tonsils. All were private patients except one. Two had such severe arthritis that they were confined to bed for periods of twelve and fourteen weeks respectively. Two had grave nephritis. All of the sixteen except two received autogenous vaccines. One of them who did not receive treatment with the autogenous vaccines has since been operated upon in Boston for calculus in bladder. Two of the series who did not receive treatment until many months after their first attack of tonsillitis suffered most severe complications. In one, the arthritis has been entirely relieved by the autogenous vaccines, and another has been so much benefitted that she is able to get along without the use of her crutch after five injections. All of the fourteen who have received the autogenous vaccines are gratified with the great benefit received from their treatment. Some of the patients treated from the onset of their throat infections have had serious complications which were relieved by the autogenous vaccines, while two in whom the diplococcus was not isolated until many months after the initial tonsillitis were very ill for nearly a year.

All of the bacteriological and laboratory work has been done by Mr. John J. Connellan to whom I desire to express my thanks and appreciation for his careful labor.

40 East 41st Street.

THE TREATMENT OF DIARRHEA IN INFANTS.

J. EPSTEIN, M. D.

CLINICAL ASSISTANT IN MEDICINE, VANDERBILT CLINIC; IN PEDIATRICS, MOUNT SINAI HOSPITAL DISPENSARY AND BABIES' HOSPITAL DISPENSARY.

New York.

It is a notable fact that the majority of diarrheal diseases in infants during the hot summer months are in bottle fed babies. This, of course, suggests that the trouble is in the food and not in the baby. If every physician would carry the gospel of maternal nursing to every mother, diarrheal diseases in infants would not take such an important place in pediatrics.

Diarrhea in infants may be due to:

(1) General or local diseases not connected with the gastro-intestinal tract.

(2) Gastro-intestinal indigestion, as a result of too much food, too frequent feeding, too high fat or sugar or a lowered tolerance for fat or sugar, or both.

(3) Intestinal infection with various pathogenic organisms or animal parasites.

(4) Intestinal intoxication, caused by fermentation or putrefaction as a result of impure food or food not kept at the proper temperature.

The first essential in the successful treatment of diarrheal diseases in infants is a correct diagnosis. When the diarrhea is simply a symptom of a general infection and not of gastro-intestinal origin, the treatment is that of the primary infection. If the trouble

lies in the gastro-intestinal tract, the cause of the diarrhea and the condition of the little patient will largely determine the course of treatment.

The following general therapeutic principles apply to all cases of diarrhea of gastro-intestinal origin:

- (1) Elimination.
- (2) Partial starvation.
- (3) Control of peristalsis.
- (4) Proper medication.
- (5) Careful feeding.

One good dose of cator oil or calomel in divided doses should be given. At the same time the lower bowel should be irrigated with warm normal saline. The laxative drug should not be again administered as repeated doses cause irritation and catarrhal inflammation of the intestines. Plain water, warm or cool, should be the only diet for 12 or, if necessary, 24 hours. This starvation diet should not be repeated. The mistake is frequently made of too prolonged starvation. This only lowers the vitality of the already weak patient and decreases the chances of recovery. To control the painful peristalsis, hot moist applications to the abdomen are very grateful to the patient. If necessary, a few small doses of codein or deodorized tincture of opium may be given.

Many infants will get well without any medicine if the gastro-intestinal tract has been cleaned and proper attention has been given to feeding and general hygiene. When medicine is indicated it is only to soothe the inflamed gastro-intestinal tract and to counteract acidity. Bismuth subcarbonate with sodium bicarbonate is all that may be necessary. There is no room in the child's little stomach for heterogenous nasty sticky chalk mixtures, with which are usually combined half a dozen other drugs, many of which are irrational or incompatible, as I have shown in an article on "Overmedication" in *Pediatrics*, June, 1914. It is very poor therapeutics to treat diarrhea with a diarrhea mixture; cough, with a cough mixture; sore throat, with a sore throat mixture; fever, with a fever mixture, and other aches and pains with an ache and pain mixture.

The feeding of the infant after the acute condition is over is of great importance, but there is no general rule to follow. Fitting the food to the baby should be the aim of the pediatrician. The infant's tolerance for milk or for the different elements in the milk should be carefully studied.

What not to do in the treatment of diarrheal diseases in infants is of more importance than what to do. Do not advocate artificial feeding if there is a mother to nurse the infant. When the supply of mother's milk is insufficient, complementary feeding with modified cow's milk should be ordered. Do not give too many laxatives, never starve the baby too long and above all do not overmedicate the little patient.

1450 Lexington Avenue.

.THE HOARSE VOICE IN A CHILD.

HAROLD HAYS, M. D., F. A. C. S.,

New York City.

A short time ago a child who had been hoarse for some weeks was brought to me. Examination showed an enlarged gland on the pharyngeal wall, which resolved on the application of caustics. The hoarseness then disappeared.

This example will show how slight a thing can cause hoarseness in children, and that very often the laryngeal condition is secondary to some trouble in the nose or throat.

Frequent colds in the head in children are evidences that nature is not strong enough to throw off the various infecting organisms. These colds are often associated with or caused by inflammatory conditions in the sinuses. Such inflammation does not tend to stop here but spreads to the mucosa of the throat and the larynx, and in many instances causes a repeated cough and hoarseness. Not only may these manifestations be due to the inflammatory condition but may be caused by the dropping of mucus from the nasopharynx down to the epiglottis and vocal chords.

Tonsils and particularly adenoids are often the etiological factors in producing hoarseness in children. This may be due to a nasal obstruction which makes it imperative for the child to breath impure air into the glottic opening, or these tissues may be the seat of a chronic infectious process, thus acting as an irritant to the very susceptible larynx. It is common in such children to see an associated bronchitis which readily clears up after the offending tissues are removed.

Of course hoarseness in children is very frequently caused by some condition in the larynx itself and is not dependent upon a primary cause elsewhere. Among the commonest causes of chronic hoarseness may be mentioned the "mis-placed voice." Some children have a habit of speaking falsetto with the result that a strain is constantly put upon the vocal chords. Hoarseness which may never disappear may result from allowing a child to continually speak in this manner. A child should be taught to modulate his voice and to bring it to the proper pitch. Among infectious causes may be mentioned croup, frequently resulting in hoarseness, which may become chronic. Acute laryngitis in childhood is not uncommon and always gives rise to the hoarse voice, and of course diphtheria must be suspected in acute cases.

If the hoarseness persists over a considerable length of time, particularly if it is associated with embarrassed respiration, one should not be satisfied until he has made a thorough examination of the larynx, for it is frequently discovered that laryngeal polypi are present which can only be removed by direct fulguration or operation. Within a short time I have seen a child who had been treated for months for a chronic laryngitis by all manner of sprays, inhalations, etc. with no result. Examination showed the presence of small pedunculated tumors, apparently being present for some time, and which were bound to increase in number and size. To my mind there is no more difficult condition to treat in children than multiple papilloma of the larynx.

If I were asked the best treatment for hoarseness in children I should say complete rest in bed, and complete rest of the throat. Ordinary inhalations have little effect but moist, warm air will help. This is best administered by allowing the croup kettle to boil continuously in the room so that the air is completely saturated with whatever medicament is used. An ice bag or ice cloths around the neck tend to soothe the inflammation. Local applications as a rule are more than worthless in children unless they are performed by a specialist. Of course the primary cause of the trouble should always be looked for and it will be surprising in how many cases some little abnormality in the nose or throat is responsible for a chronic inflammation of the larynx.

11 West 81st Street.

Irritability of the bladder often points to a tubercular cystitis.

Skin Cancer.

Prickle-cell and basal-cell skin cancers are the subject of a paper by H. H. Hazen, Washington. The basal-cell neoplasms frequently spring from seborrheic keratoses, from epidermal nodules, small sebaceous cysts or possibly benign epithelial growths, as well as from various other keratoses such as those due to arsenic, so-called papillomas and much more rarely from the lesions of lupus, lues, psoriasis and blastomycosis. Prickle-cell cancers do not often originate from seborrheic keratosis, unless on the hand, but they do arise from Roentgen-ray burns, scars, etc. Basal-cell cancers are most frequent on the face, especially on the eyelids and nasofacial grooves. The prickle-cell cancers are most common on the mucous membrane, especially of the lip. They form the vast majority of all cancers of the extremities, and may occur anywhere on the skin. In their earliest stages, either type shows itself as a slight nodule that speedily forms an indurated ulcer with a crust. The fully developed squamous-cell cancer is often more or less verrucosized, while the surface of a basal-cell cancer is comparatively smooth. Basal-cell growths never metastasize, according to Hazen, unless they change into a prickle-cell type. On the other hand, the prickle-cell cancers nearly always metastasize to the regional lymphatics, though this may not occur for a good many years. The prickle-cell cancer infiltrates deeply, while the basal-cell cancers are more smooth and the invasion is less extensive. It is frequently impossible to diagnose the variety in the earliest stages, except by the history of the precancerous lesion and its location. The rapidity of the growth is of great importance, and the only safe method of microscopically determining the diagnosis is by excision of the whole growth. Excision is the advisable treatment. The Roentgen ray when it has failed, has probably not had sufficient penetration, and Hazen thinks it doubtful whether radium can do anything more than the ray. In uncertain cases, we should always consider the first essential an accurate diagnosis, and only the knife of actual cautery should be employed in the removal. In very early cancers that have not existed for more than a month, a local operation will probably suffice.—(J. A. M. A., March 25.)

Cancer of the Breast.

Carl Beck, Chicago, recommends a more extensive operation than has been used in cases of extensive recurrent and hopeless cancer of the breast. The only thing generally thought best to do is to apply Roentgen rays or Coley's fluid and morphin. In the course of the last few years he has been able to save a few such cases by the operation of exarticulation of the whole shoulder girdle, including the clavicle, arm and scapula, with the plexus and vessels of the infected side, and the ribs, should they seem invaded by the carcinoma. It is a delicate as well as an extensive operation, and attended with great shock to a person who is not often in the best condition. Beck has done this operation eight times in nine years. All cases were desperate; some of the patients operated on several times and were all considered inoperable. The cases are reported, and two practical recoveries have been obtained, while another patient did well for three years before she was lost sight of.—(J. A. M. A., May 22).

Among the conditions in which thyroid insufficiency may terminate, the most important, with the exception of myxedema and Graves's disease, are arteriosclerosis and premature senility.

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The Campaign Against Cancer.

If we can educate the people in respect of the early signs of cancer and the necessity of prompt surgical intervention as thoroughly as we have educated them with respect to tuberculosis, the reduction of mortality attained should be proportionately greater. The fact that cancer is a purely local disease in its beginnings makes delay in recognition the crucial point. It is a safe estimate that 60,000 people die unnecessarily every year in the United States because of such delay.

But it is not alone the public that must be awakened. The general practitioner must bestir himself as regards the early recognition of precancerous lesions, instead of fiddling along for a year or more before referring the cases to the surgeon. We must rid ourselves of the prevailing pessimistic attitude toward cancer and its curability. There is no doubt that a fair general test of early operation in true incipient cancer and in the many precancerous lesions would give remarkable results. Our bad surgical record to date is chargeable not so much to the hopelessness of the disease as it is to the notorious delay in the handling of the cases. Our present method of dealing with cancer is much the same as though we were to ignore syphilis until locomotor ataxia or paresis supervened.

We have simply got to concentrate our every energy upon expeditious management. After the campaign now launched, with this vital issue brought home to practically every practitioner in the country, one who failed hereafter to be alert would stand before his professional brethren convicted of criminal negligence and deserving of punitive discipline.

The Effect of Moving Pictures on the Eyes.

The tiring effect of moving pictures, when viewed for the length of time devoted to the average program, is familiar to everyone. In the moving picture places where ventilation compares favorably with that of theatres engaged in the giving of regular dramatic performances, and where the crowds are of about the size of the usual theatre audiences, one notices a general physical tire which is missed in houses devoted to the spoken drama. This inordinate tire, in our view, is due to special strain on the mechanisms concerned in vision. In the case of regular theatrical performances there is a rational balance between the functions of sight and hearing; each supplements the other. But in the case of moving pictures everything depends upon visual attention of the most intense and continuous sort, with lightning-like ocular alterations of the finest degrees. While you listen to Hamlet you let your accommodation rest more or less, until some change of scene or action necessitates adjustment. To spend two hours straining the eyes in following the kaleidoscopic operations on the screen is really worse than would be listening to a brass band for the same length of time in a dark room. There is really nothing comparable to this kind of ocular strain. Then when one considers the number of people who spend evening after evening at the movies, it is easy to realize that there must be damaging results, both as regards the visual apparatus itself and the nervous system. The technical details of this damage, as actually observed by ophthalmologists, we leave to the experts who have contributed their experiences to our symposium in this issue of THE MEDICAL TIMES.

Dr. Bolduan's Educational Lunch Room.

It is a very interesting dietetic experiment which Dr. Bolduan of the Health Department has inaugurated for the benefit of the employees in his office. We say for the benefit of the employees—rather should we say for the benefit of the community, for the principles which he is putting into practical operation will yet guide everyone who wishes to eat rationally. Dr. Bolduan is showing his associates how to consume balanced caloric rations and stoke their physiological furnaces properly, instead of eating almost haphazardly and either cheating themselves of their caloric due or over-stoking themselves and at the same time getting mulcted in point of cost.

The daily menu is a two-page folder in which is set forth the cost per portion of various dishes, the amount to be taken, the caloric value, and the protein content. Specimen lunches are suggested, one of low cost and one of high cost, the former of a caloric value of about 1400, the latter of about 1800. The low cost lunch averages about 22 cents, the high cost 46 cents. The menu gives a generous choice of dishes, permitting of great variety.

Upon the back of the folder there are succinct statements as to food constituents and the parts played by them in the economy; also data with respect to the number of calories required daily by different classes of workers.

Dr. Bolduan has a caloric cook book in process of preparation which will be issued in several languages.

Some of the food manufacturers are labeling the caloric value of their products, and it is to be expected that others will gradually follow suit. Restaurant capital will undoubtedly take notice before long.

It occurs to us that our campaign of education in respect of the dietetic prophylaxis of the degenerative

diseases of middle and late life would be more effective if we could get the general public to eat properly balanced caloric rations according to the very simple principles worked out practically by Dr. Bolduan.

Antivaccination Sentiment.

Antivaccination sentiment is attributed by many medical men and vaccine manufacturers chiefly to two things—one the fact that the operation is regarded as a joke, which results in improper care of the wound and unfortunate results, and second, the fact that school authorities usually insist upon students being successfully vaccinated before entering school in the fall, which means vaccinating to a large extent in July and August, when the wound is more likely to be exposed to dust and dirt and become infected, and when the quality of vaccine is not so good, since heat interferes seriously with the potency of the product. If the school authorities could be brought to the point where they would advocate vaccination in winter, when there is not only less possibility of infection, but when the quality of the vaccine itself is very much improved, and if physicians would advocate that a vaccination wound be treated the same as any other surgical lesion, tremendous good would be accomplished.

There is another factor accounting for the antivaccination sentiment, however, of psychological interest. Variola is so relatively rare nowadays that it has no terrors for the crowd. Its rarity to-day is not definitely seen to be the result of systematic vaccination. Nothing but serious outbreaks and conclusive, objective demonstration will convince the doubters, and such outbreaks are not likely to occur because of our fairly good protective control. So of course the doubt will persist.

Some day, when tuberculosis has become as rare as variola, there will be scoffers at the principles now accepted by society because impressed through bitter experience. These scoffers will deny the connection between bad hygiene and consumption, and will attribute the disease to other factors. They will be a nuisance for future health officers to deal with, just as the antivaccinationists are a nuisance to-day. It will be impossible for the sanitarians of the future, with consumption all but stamped out, to arrange for convincing demonstrations on the large scale familiar to us of to-day, just as it is not feasible for us to reproduce the frightful conditions that once prevailed with respect to variola. After all, the laity learn only through disastrous social experience, and the truths and technical methods of the laboratory hold no great interest for them. With the growth of democracy the tendency to tinker foolishly with fundamental medical truths and the tried and tested fruits of scientific experience will become more and more of a menace. It is too bad that what has been learned through experience costly to life and health has to be learned over and over again, or has to suffer any discredit.

War on Quackery.

We congratulate the New York County Medical Society, the Justices of Special Sessions and the prosecuting authorities upon their successful drive against the quacks. Actually to read in the daily press of the rounding up of these offenders in large numbers and of \$250 fines seems more like the dream of an unfulfilled wish than like reality. And the campaign has not been a spasmodic one, but a carefully planned and sustained drive against the whole gang.

Equally gratifying is the decision of the Appellate Division of the Supreme Court finding Miss V. F. Page

guilty of practicing medicine without a license, for Miss Page is a New Thoughter. We ought now to be able to put a stop to the operations of all the practitioners of this type, of whom there are a goodly number. They appear to have dodged the authorities for a long time on the ground that they did not treat patients but taught people New Thought ideas. So-called lecture courses are given, books sold, etc.

The swami is another "teacher" whom we ought now to "get," along with the other fry.

We have taken the trouble to go to the Sunday service of a New Thought church, to listen to the piffle of the garbed-all-in-white leader and to look over the audience. It is a pathetic exhibition. The truth is that New York City is just full of people who are as simple as the mob of Juvenal's day which never grew tired of listening to the astrologers. It is an astounding revelation to one who, not having realized the facts, goes for the first time to a New Thought meeting. It is a rough and ready way of estimating the intelligence of that public whom we so frequently address on topics of medical import, and whom we *assume* to represent fair grades of intellect. Somehow or other we are loath to believe that the depth of public imbecility is abysmal, but it appears to be a fact, nevertheless. The people whom one sees at these New Thought meetings compare favorably with other audiences.

We know a great deal about feeble-mindedness in the individual, but the subject ought to be studied and discussed more thoroughly in its social aspects. Nothing accounts so well for the strange devotions and group expressions that we constantly witness, in the field of politics, for example, and in the domains of [so-called] religion, the movies, the cabaret, and of some of the alleged sports.

The Dispensary Frankenstein.

Once upon a time physicians treated rich and poor alike. If a patient was deserving but really unable to pay he was looked after just the same. When we restricted our practice only to those able to pay, and carelessly eliminated the poor, the dispensary was born and is now a Frankenstein and a nuisance. It is true that the poor are treated in it by physicians, but so are those able to pay in considerable measure. The problem confronting us to-day with respect to the abuse of charity has not been born of our alleged altruism. Our altruism has been largely a matter of rhetoric, inauguration addresses, and post-prandial speeches. While this is the strict truth we are not citing it as altogether a matter making for discredit, for the course the profession has pursued in these matters has been largely dictated by the compulsion of expediency and other practical considerations. The growing complexity of civilization hardly admits of the physician practicing medicine in the guise of a medical Saint Francis. Nevertheless there have been evil results which have flowed from our departures from the old spirit and the ancient methods. Let us at least state the truth and have done with piffle concerning these matters.

We hope no one will insist that dispensary physicians are actuated in their labors by philanthropic considerations. Surely the day for such bromidic flubdub has passed, even after the champagne has passed around the board several times and cigars are lit.

Who dare revive the old bunk?

In the persistent vomiting, which occurs during a gastric crisis in Graves's disease, pituitary extract is sometimes of great value.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

Watchful Waiting.

What doctor does not know the impatient waiter for death and insurance? The tide of life ebbs low, and the doctor is importuned, more or less tactfully, to name the day or hour of death. With motives more or less transparent, solicitous heirs inquire as to the fatal moment. "How long do you think Mr. Smith will live, doctor? * * * A week, did you say? * * * As long as that? It doesn't seem to me that he will last that long; I don't think he will last till morning." Amusing episodes, were it not for the tragedy of them. It is such experiences as these which help to make up many doctors' cynical estimate of human nature.

Monkeyers With the Medical Buzz-Saw.

Nowadays there appears to be a general itch to interfere with every established institution. Whatever is, is wrong. This seems to be the guiding principle of our respectable anarchists. Whoever stands for the protection of such institutions, when attacked, however good they may be, is a "reactionary." One sees this sort of thing, for example, in the field of education. The educational anarchists point out that the handling of pupils in large groups compels the authorities to place too great emphasis on discipline; hence they charge that docility is ranked above originality, and that a pupil so handled becomes and remains through life merely one of the mob, living from without, not from within, hysterical and suggestible. They claim that there are three vicious products: the timid crushed spirit, the smug Philistine and the law-breaker. Therefore down with the system; therefore fool experiments galore. Never mind the great work that has been done, and never mind the great results; the anarchists believe that out of a leaden people can be created a golden age, that by their magic commonplace pupils can be made into original geniuses, and that sows' ears can be converted into silk purses.

In "monkeying" with medicine our anarchists are risking their precious lives, and they would quit if they realized it. They are the very people who would be most panic-stricken at the results of their tinkering and the first to disavow and dodge them. The neuroses that urge them now would demoralize them when faced by their own Frankensteins. "All that a man hath will he give for his life." After pulling down the house of medicine about him our anarchist would wish above all men that he could undo the work that had destroyed the physician, or impaired his usefulness one whit. And the anarchist who had his way in school administration, or lack of it, would fear more than anyone else the resulting Rousseaus.

The Medical Dreamer and His Charm.

"There is a soul of truth in things erroneous."—*Shakespeare*.

The medical man who is pleasantly voluble—what a never-ending source of wonder and delight he is! We must say that few bores are encountered in the profession. We seem to have only the pleasantly voluble man and the man of few words. They make up most of the medical crowd.

Now one of the most charming things about the man who is pleasantly voluble is his frequent disregard of facts. Facts do not hamper him very much. One of the most distinguished men in the country once confided to the writer that he could talk most interestingly about

things of which he knew least—and at unlimited length. This reminds one of Chesterton's brilliant essay on cabbages. The story is told that the topic was suggested to him by a journalist with whom he was discussing the fact that subjects of which he knew little or nothing inspired him most, just as in the case of our pleasantly voluble medical friends. The cabbage essay was one of the best things he ever wrote, although he knew nothing about cabbages. In much the same circumstances, we believe, Swift wrote his little masterpiece on the broomstick.

Matter-of-fact, solemn people are unable to see the social usefulness of our voluble ones. They may not always be performers, it is true, but they quicken others. There is no doubt about that. Curious new points of view are suggested by them. Apparently insoluble problems are lighted up. The dull commonplaces of practice are transfigured.

Perhaps we ought to divide our voluble ones into those fluent with the pen as well as with the tongue, for men who are afflicted with the weakness of diffidence and the sin of modesty may find it necessary to express themselves with the pen. If they have something to say the profession welcomes the one class not less than the other.

It is fatal for these people to become possessed of too much knowledge. They are the children of science, and when knowledge comes their charm fades (what euphemistically goes by the name of knowledge). To them the world is a fairy forest.

Charles Lamb once wrote fierce philippics—for him—against someone with whom he was wroth. Friends endeavored to bring them together. But the gentle Lamb wanted to keep up his invective for awhile, and said (the reader will have to imagine the famous Lamb stutter): "I can't hate a man that I know."

So the pleasantly voluble ones mustn't know too many cold facts. Introduced to the windmills which they charge all the glamor fades, and, like Charles Lamb, all feeling goes out of them when the fairy forest is shown to be stunted pine.

The pleasantly voluble ought never to be ruthlessly handled, as sometimes they ill-advisedly are. If they get into the wrong fields steer them out and into the right ones. You will be repaid for the trouble. Under no circumstances silence or destroy them. Without their voices in the medical societies and their imaginative flights in the journals the world of medicine would be gray indeed.

Laying Neurotic Foundations.

"The doctor won't hurt you," says the child's mother as you prepare to insert a speculum into the little one's nostril. Now the mind of the child is so limited in its operations that it ignores the negative form of the phrase, which suggests nothing to it but impending injury and reason for fear. So the constantly protecting parent unwittingly suggests the fear concept when really intending to implant fortitude and courage, and again he or she suggests it wittingly when the child attempts to act on his own initiative, as in climbing a fence, or a tree, or in any other way acting like a normal child. "Come down, John, you'll hurt yourself." How familiar these cautionary prohibitions! It would be far better for the child to fracture his skull than to grow up a mollycoddle.

Well, the point is that it is these things that lay the foundation for the apprehension neurosis of later life. They are not the only things, of course, but they are among the commonest.

And so the adult who has been so "trained" in childhood finds his initiative paralyzed, or at least has to call inordinately upon his will power even in some of the ordinary situations in life. When real strain is anticipated he actually suffers from his baseless fears. In severe instances apprehension is constantly present, and we have a definite neurosis to deal with. Many of our otherwise ablest men confess to the affliction. The lawyer who worries about his cases in court to the point of actual suffering is, as a rule, worrying about himself.

We will bet anything that Theodore Roosevelt was permitted to develop normally as a child.

When we hear someone say: "I won't hurt you, dear," we always feel savage, and have much trouble in restraining an impulse to wring someone's neck.

Boston Journals Please Copy.

In some of the older cities of the United States a few men are born to the medical purple, as it were. That is, they are members of wealthy and socially powerful families, and, if they happen to elect medicine as a vocation, everything in the way of appointments and advancements comes to them if they are ambitious. These men are well qualified, as far as training goes, and sometimes they are naturally fitted for professional success. But it is true as a rule that they do not stand upon the same competitive plane as the vast majority of their fellows. Most of them would not rise above mediocrity if they had to stand upon that plane.

The foregoing remarks are introductory to the following thought. It has long struck us as in peculiarly bad taste for men born to the purple (or what sometimes amounts to the same thing—attaining the purple through marriage) to speak superciliously or condescendingly about the professional men or women who have not fared any too well upon the competitive plane. All that they say may be true, but its coming from such lips is an affront prompting natural resentment. Peculiarly maddening are the men of this type who persistently travel up and down the country ventilating their offensive views to the audiences which their prominence commands. When they fall to planning remedies for the dreadful plight of their brethren then one is tempted more than any other time to call attention to their own defects and to suggest curative measures.

Sometimes it seems to us that if a really healthy spirit were in the profession these men would be roundly denounced.

Dr. Jekyll and Mr. Hyde.

In our considerations of dual personality we usually conceive of the alternating existence of separate individualities, each unconscious of the other. But a far commoner condition is that in which the individual consciously plays two parts. The two-faced person is familiar. He is a saint on Sunday who pays starvation wages on Saturday to his workmen. He is a conventional model whose private life is rotten. He robs the poor and endows foundations, hospitals and libraries. He is a statesman on the platform or in office, and a peanut politician on the side. He is a clergyman in vestments and a third-rate citizen in heart and mind. He is ostensibly a physician and a charlatan in fact. He is an evangelist in the sawdust arena and a promoter of fake enterprises elsewhere.

Why bother so much about the rare instances of the psychologists when we are surrounded by the commoner type? It is the latter who deserve a great deal of unrespectful attention, now unbeknownst, despite their consummate respectability.

Cancer

The Treatment of Inoperable Cancer.

Silas P. Beebe, Professor of Experimental Therapeutics in Cornell University Medical School, estimates that 75,000 persons die annually in the United States from some form of cancer, and that at least 80 per cent. of all persons suffering from malignant tumors, eventually reach the inoperable or incurable stage.

He presents a new method of treatment for inoperable cancer giving Alexander Horovitz, an Austrian biologist and chemist, the credit of discovery, the technique and present development of this method was evolved by Beebe and J. Wallace Beveridge. The chemical work was done in the General Memorial Hospital.

In referring to these clinical experiments, Dr. Beebe says:—"At the point of injection in normal tissue an active local reaction is produced; this reaction is evidenced by swelling, redness, heat and tenderness. Then follows a general leucocytosis with a relatively high lymphocytosis, some rise in temperature, and occasionally, a chill of varying intensity and duration. Now if the local area which receives the injection is examined microscopically, there are found all the characteristics of a moderately acute inflammatory reaction with a relatively large leucocytic infiltration. When such extracts were injected directly into a transplantable rat sarcoma, the characteristic reaction followed and was accompanied by a peculiar necrosis of the tumor cells with complete regression.

When the skin over the tumor, prior to the injection, is ulcerated, the effected area rapidly degenerates and a mass of necrotic tissue is discharged, followed by healing, while if the skin is not broken or ulcerated, the reaction following the injection produced a marked infiltration of serum and leucocytes, particularly around the borders of the tumor, the tumor itself was gradually absorbed, and there was an apparent complete restoration of normal cellular conditions."

Subcutaneous injections of this extract have to a considerable extent displaced the direct tumor injection, having the obvious advantage of permitting a more certain dose, of bringing this therapeutic agent directly in contact with the growing border of the malignant cells, and producing in the depths of the tumor rather than on its surface an intense reaction, which appears to be unfavorable for the continued growth of the tumor. When these injections were first begun in human subjects, they were always confined to the growth itself. More recently they have been given subcutaneously in the arm, and it has been interesting to note that when so given there has been observed fairly definite reactive responses in the growth; these reactions in the growth are evidenced by swelling, temporary increase in pain, followed a few hours later by a considerable relief from pain, and in some forms of tumor by softening of the growth and a gradual diminution in its size.

Beebe's paper contains a report of two groups of cases, the first under his personal observation at the General Memorial Hospital in which x-rays from a Coolidge tube formed a part of the treatment which was not so successful and satisfactory as in the second group of cases under the supervision of Beveridge at the Polyclinic Hospital. The latter group was treated entirely by hypodermic injection of the extract, no other therapeutic measures being used. The following two cases cited are taken from Beebe's preliminary report, viz.:

Case XI. Man, aged fifty years, had recurrent colloid

carcinoma of the rectum. Kraske operation two years ago. In July recurrence became troublesome, and at the time of his admission to the hospital there was extensive involvement of the tissues, in and about the rectum and including the base of the bladder. Patient had severe pain, great difficulty in defecating. It was impossible at the time of his admission to pass a rectal tube, and the bladder irritation was so severe as to cause almost constant tenesmus. Injections at the hospital were made directly into the growth. During his stay in the hospital of six weeks, sixteen injections were made; following the earlier ones, there was marked reaction accompanied by rise of temperature and an occasional chill. X-ray examination revealed involvement of sacrum. Large broken down masses of tumor were discharged. Pain and irritation about the base of the bladder gradually diminished. The swelling and pain about the sacrum entirely disappeared, the tumor masses in the rectum were in part absorbed and in part broken down, and were discharged. At the end of six weeks the patient left the hospital, free from pain, with normal control of bladder. Patient was passing formed stools, the rectum admitted forefinger easily without pain, and tumor masses could not be felt. After leaving the hospital, the patient had a few injections in the arm, he continued to gain in weight and strength, and his general condition continued to improve.

Case XV. Woman, aged fifty-one years, had a recurrent inoperable carcinoma of the breast. Recurrence involved the fifth and sixth rib, at the lower point of the old scar. Mass about three inches in diameter, very hard, the surface red. Some exudate appeared at the apex of the growth. Patient had intense pain along the left arm and shoulder, including the left side of the neck. Left arm markedly edematous and painful to touch. Edema extended to the region above the clavicle. Patient had had x-ray treatment for a short time prior to admission to hospital without effect. Treatment was entirely by injection into the tumor and into the arm on the right side. At the time of her admission and previously, patient had temperature of 100° to 101° F., which finally became normal. During the period of twenty-six days at the hospital, patient received eighteen injections, two being in the right arm. After her discharge, patient continued to receive the injections at weekly intervals into the right arm. When the patient left the hospital the induration had entirely disappeared, edema in the arm and above the clavicle had been absorbed, and she had no pain. The central portion of the tumor mass was marked by a scab, about a quarter of an inch in diameter, representing a point of an old sinus through which most of the tumor mass had been discharged. After she left the hospital, this area entirely healed, the patient returned to work and was subsequently entirely well.

In summing up his observation Beebe states:—"In spite of the somewhat complex and unusual character of the remedy employed, the evidence warrants further use of this method of treatment. In judging the merit of a treatment for inoperable cancer, it is probably wise to discount such matters as the relief from pain and the improvement of the general physical condition, because while these matters are of much concern to the patient, they are to a considerable degree subjective in character and may to some extent be expected to follow the employment of any new method which stimulates the patient with faith and hope."—(N. Y. Med Jour., May, 15.)

Experiences with Rontgen and Radium Treatment of Cancer.

J. Nordenstoft (*Ugesk. f. Laeger*, 1914, xxvi) tabulates the minute details of 21 cases of external cancer in which the patients were apparently cured, as the cancer has vanished and there has been no sign of recurrence during the interval since, which ranges from a few months to three years. The tumors were all on the face except one at the mouth of the urethra.

S. Nordenstoft was the first physician in Denmark to report a case of deeper cancer with multiple metastases in which a clinical cure was realized with röntgen exposures. The patient, a young woman, had had one ovary removed fifteen months before for a supposed benign tumor. The cancer was in the remaining ovary, which was then removed. Three weeks afterward the röntgen treatment was begun when several metastatic lumps could already be felt. One in Douglas' pouch was a knobby tumor as large as a fist. The röntgen treatment was applied systematically and the metastatic tumors subsided; others developed at other points again and again, and each time they retrograded under röntgen treatment. Several times he had expected to present the patient at a meeting of his medical society but each time new metastases developed in the interval between the sending in of the notice and the meeting. At present no tumors can be palpated and there is apparently nothing abnormal in the pelvis except that the serosa is rough and irregular in Douglas' pouch. He has not given up hopes of a final cure as the metastases develop now at longer intervals and seem to be more susceptible to the röntgen rays. There is also a kind of auto-immunization to be counted on, like a vaccine therapy, from absorption of the cancerous tissue.

Nordenstoft reports a number of other cases of cancer which have been given röntgen treatment with encouraging results. He regards it as superior to operative measures even for superficial cancers, as it does not sacrifice any tissue; even the stroma of the cancer is saved, and he believes that there is less danger of recurrence. Last, but not least, patients come for treatment at an earlier stage when they know they do not have to submit to a mutilating operation. His experience with radium, on the contrary, has been unfavorable. He emphasizes the fact that treatment of cancer requires individualization and skillful application of adjuvants as needed.—(*Surg., Gyn. & Obst.*)

Carcinoma of the Stomach.

James Sherren, surgeon to the London Hospital, says that in carcinoma of the stomach there are two ways in which the present results can be greatly improved: by prevention, and by early operation. Prevention, by submitting cases of chronic gastric ulcer to early surgical treatment; early operation, by looking upon every marked digestive disturbance in adult life as potentially surgical. The early diagnosis of carcinoma of the stomach is impossible apart from exploration. All the signs that make for certainty are late signs.

The cases of carcinoma of the stomach may be divided into (1) those following on a long history of gastric disease; (2) those arising in patients with a previously "clean" gastric history. The first group is that in which "preventive" treatment is possible; in the second, early suspicion should send the patient equally early to the surgeon. The frequency with which carcinoma follows chronic ulcer, however, is impossible to estimate.

In the first of Sherren's 130 cases, only 42 were women, the same sex ratio (3 to 1) found in simple chronic gastric ulcer, a very suggestive point.

The evidence, obtained from the examination of specimens removed at operation, leaves no room for doubt that, in a certain percentage of cases, carcinoma follows directly on gastric ulcer. In the second group, diagnosis is impossible in the early stages. The symptoms usually consist in the insidious onset of an irregular dyspepsia in a previously healthy individual. Every case of this type must be looked upon as possibly carcinomatous; only in this way can the present surgical helplessness be combated.

The prognosis of cases in this group is much worse than those in the first, on account of the advanced stage at which they come under observation. Thus, of 75 cases operated upon, with a history of less than one year, only 5 were early enough for partial gastrectomy. Of 43, who had a history of over 4 years' duration, Sherren was able to do the "radical" operation in no less than 18.

Of the conditions likely to be mistaken for carcinoma, the digestive disturbances accompanying certain diseases of the appendix and gall-stones are most common. Examination by *x*-rays after a bismuth meal gives important corroborative evidence in many cases, but the earlier the case the less this possibility. Again, a low total acidity and the absence of free HCl in gastric contents, withdrawn after an Ewald test-meal, add weight to the suspicion, but these are present in the majority of the cases of dyspepsia associated with gall-stones and disease of the appendix.

Treatment consists in abdominal exploration in every suspicious case. Opening the abdomen to establish a diagnosis before thorough investigation is absolutely unjustifiable. If, on opening the abdomen, some organic surgical condition is not revealed, it usually means that the previous examination has not been sufficient.—*The Practitioner.*

Electrothermic Coagulation and Rontgen Therapy in the Treatment of Malignant Disease.

G. E. Pfahler has a method consisting in the complete destruction or the removal of all visible and palpable malignant disease by means of the d'Arsonval current, followed, or at times preceded, by full doses of the röntgen rays, given from as many different fields of entrance as possible, so that as much irradiation is produced as though the rays alone were depended upon for the cure of the disease.

Twenty reports were made on twenty cases treated by this method, several of which were considered inoperable by the usual surgical technique.

The conclusions are:

1. Electrothermic coagulation permits the destruction of a number of inoperable carcinomata and epitheliomata.
2. It is a bloodless operation and gives decided advantages in malignant disease about the mouth.
3. It seems that metastasis is less likely to follow, because the operative area is at once completely sealed.
4. The disease must be destroyed completely.
5. Deep röntgentherapy must be applied with the best technique and with the same degree of thoroughness as if it had not been previously destroyed.
6. Good results are being obtained in a number of otherwise hopeless cases.
7. The time is too short to express any valuable opinion as to its permanency.—(*Surg., Gyn. & Obst.*)

The Rontgenologic Method of Differentiating Between Ulcer and Cancer of the Stomach and Duodenum.

A. F. Holding gives a review of the literature (*Am. J. M. Sc.*, 1914, cxlviii, 866) and has constructed a very full and descriptive table to differentiate ulcer from cancer. He lays stress on the fact that to make a röntgenologic diagnosis of a gastric lesion that is in any way accurate a large number of pictures must be taken (serial röntgenography), which, of course, means added expense to the patient. His conclusions are as follows:

1. The röntgen method is the most accurate and at the same time the most expensive single method of diagnosing gastro-intestinal lesions. It is also the safest and most valuable to the patient.
2. A pre-operative röntgen examination in abdominal cases (1) will save many a patient from the shock of an exploratory operation; (2) should shorten the time duration of the operation; (3) should improve surgical statistics.
3. An exploratory operation for diagnosis is usually evidence of inadequate röntgen methods.
4. A post-operative röntgen examination of abdominal cases will lead to important modifications in the technique of such operations, just as post-treatment röntgen examination of fractures has modified general surgical measures.
5. Schmieden states: "A scientific diagnostician will not diagnose gastric lesions on röntgen-ray examinations alone, nor should he diagnose important gastric lesions without using the röntgen rays."—(*Surg., Gyn. & Obst.*)

A Further Report of the Pathologic Evidence of the Relationship of Gastric Ulcer and Gastric Carcinoma.

L. B. Wilson and I. E. McDowell report (*Am. J. M. Sc.*, 1914, cxlviii, 796) 445 pathological specimens of gastric carcinoma received in the Mayo laboratory during the past nine years; 46 of these were removed at autopsy; 399 were dissected by the surgeon.

The latter were classified into four groups:

1. Ulcer with cancer questionable.
2. Ulcer with beginning cancer.
3. Ulcer with advanced cancer.
4. Cancer throughout the lesion.
1. The significance of this group, comprised of 19 cases, is that four have died of carcinoma.
2. Of 41 cases, 18 have died of carcinoma, 6 in less than thirty days; the remaining 12 lived an average period of twenty-eight months after operation.
3. Of 94 cases, 58 have died, 18 in less than thirty days; the remaining 40 died an average period of fourteen months after operation.
4. Of 97 cases, 78 have died; 38 in less than thirty days after operation; the remaining 44 died on an average of fourteen months after operation.

The clinical and pathologic data in relation to the development of gastric cancer or gastric ulcer are in close agreement: (1) with regard to the average age at operation; (2) with regard to the average period of previous history suggestive of ulcer; and (3) with regard to the average number of months of acute history. Such an agreement of data from two independent studies of this series of cases is not accidental.

From a careful study of the clinical and pathologic evidence of this series of cases it seems probable that gastric cancer rarely develops except at the site of a previous ulcerative lesion of the mucosa.—(*Surg., Gyn. & Obst.*)

The Radical Operation for Cancer of the Pyloric End of the Stomach.

W. J. Mayo says the most important reason for the apathetic attitude of the profession in regard to the cure of cancer of the stomach has been the impossibility of making a diagnosis sufficiently early for the performance of a radical operation with a reasonable operative mortality and a fair prospect of cure. Exploratory incisions, which up to within the past year were chiefly relied upon, are fortunately no longer required in anything like the percentage of cases in which they were formerly necessary. The history of the patient, the radiographic and physical findings, and the use of the stomach tube to-day give a reasonable prospect of a correct early diagnosis. The laboratory test, so long depended on and which proved so fallacious a guide, has been justly relegated to a minor position, but it is of some value and should not be discarded.

These patients are usually poor risks; the operation is one which makes large demands on their resistance, and the margin between recovery and death is at best a narrow one; therefore, every effort should be made to improve the operative technique.

In the Mayo clinic in the last fifteen years a number of the two-stage operations for cancer of the stomach have been made, and of these not one patient died as a result of the resection. Standing alone, this would seem to be a strong if not an absolute indication for the two-stage operation, but an examination of the facts concerning these cases leaves the indications less clear, since the cases were in a sense selected from a number of patients on whom a primary resection could have been made, and who were subjected to a gastro-enterostomy with the intention of following this procedure by a resection, but who for one reason or another never came to the radical operation. A few who were in a most serious condition died following the gastro-enterostomy. They would of course have died if a primary resection had been made instead of a gastro-enterostomy, but the resection received the benefit so far as mortality statistics are concerned. Some of the patients, especially those with ulcerating cancerous masses, did not sufficiently improve after gastro-enterostomy to enable them to submit to a second operation, again bettering the statistics of resection by the elimination. Following the gastro-enterostomy, a delay occasionally occurred before the second operation, as a result of various causes, which resulted in the vascularization of the adhesions which so often formed following the first operation and which became infected with carcinomatous cells.

Grafting in carcinoma of the stomach is exceedingly common, especially grafting to the peritoneum, and the necessary handling of the growth, irritation of the peritoneum, and the injury inflicted by the performance of the gastro-enterostomy itself are all matters of importance in this connection.

The mortality depends more upon the cases which will be accepted for operation than upon any other factor. Some years the Mayo clinic has had mortalities following partial gastrectomies as low as 6 per cent.; in other years, with an increasing experience and improved technique, a mortality of twice that or even more, due to the class of cases which were accepted for operation and which would previously have been subjected, if operated on at all, to a palliative gastro-enterostomy.

It was with much interest, therefore, that the author

investigated the method of Polya in which, after the excision is made, the end of the stomach is directly applied to the side of the jejunum, about 6 to 12 inches from its origin. This operation has some obvious advantages. It saves the time which is consumed in closing the end of the stomach, and in cases in which only a small pouch of the stomach is left is very much easier than performing an independent gastro-enterostomy. The Mayo clinic made a number of resections with this type of reunion with satisfaction, and the author predicts for this procedure a large field of usefulness if it does not become the method of choice.—(*Surg., Gyn. & Obst.*)

Mammary Cancer.

The subject of mammary cancer is discussed by W. L. Rodman, Philadelphia, in an address delivered before the Southern Medical Association at Richmond. Mammary cancer is second in frequency only to cancer of the stomach, and the importance of early diagnosis is emphasized. Early in the disease, a patient seems to be generally in perfect health, and the disease is at this time purely local. Later, the other symptoms of glandular enlargements and metastases become prominent. The surgical method is the best for early diagnosis. If the small growth is excised with a fair amount of the surrounding tissue so as to get around any outlying cancer cells, the wound quickly heals and that is the end of it. An early clinical diagnosis cannot always be made, but it usually can, and when in doubt, the only rational procedure is to remove the tumor with a reasonable amount of surrounding tissue and submit it to an immediate pathologic examination by freezing. The only safe plan is to obtain the consent of the patient to a complete operation, should it be necessary, the surgeon being guided by the report of the pathologist based on frozen sections. Properly and early treated mammary cancer is curable. He prefers to limit his statistics to private patients concerning whom everything is known, rather than to include ward cases which come with partial history and imperfect knowledge. Of fifty private patients taken consecutively, thirty-six are well three or more years after operation, that is, 72 per cent., and a tabulated summary of these cases is given and special points noted.—(*J. A. M. A.*, Feb. 27).

Cancer of the Liver.

F. C. Yeomans, New York, published a final report of the case reported in *The Journal* of May 29, 1909, more than two years after the first operation for primary carcinoma of the liver. Patient had remained well then for over two years, but in the latter part of 1913 the symptoms again showed themselves, and the second operation, is here reported. The patient went through the operation favorably to all appearances, but after being removed to her room, died suddenly, probably from embolism. The microscopic examination of the growth extracted revealed some unusual characters, in some areas, apparently a mixed-cell sarcoma; but in others, justifying the diagnosis of carcinoma. It is concluded that the apparently sarcomatous tissue was in reality only inflammatory. The ultimate prognosis of this condition is hopeless in all except single and primary growths, and even in the latter the diagnosis is usually wrong.—(*J. A. M. A.*, April 17.)

Affections of the cornea, such as interstitial keratitis, no less than of the skin, will often do well on thyroid extract.

The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

TWILIGHT SLEEP AND ITS PSYCHOLOGY.*

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Before presenting this address it would be well to call attention to the fact that I am not an obstetrician, but a neurologist and a psychiatrist. There are two reasons for this, first, in order to assure you that I have no prejudices on the subject, and have therefore gone into it with an open mind, seeking only to find the truth, and, secondly, that you may feel my conclusions and hypotheses will be drawn without bias.

Fortunately I have been able to review most of the literature, both foreign and domestic, on the subject of morphin-scopolamin anesthesia since it was first advocated in 1900 by Korff, and in 1902 when von Steinbuchel recommended its use in obstetrics. The opinions of various operators as to its uses in general surgery need not be mentioned other than to say that in the vast majority of cases the operations were concluded under ether, chloroform, or nitrous oxide anesthesia, and that finally its uses grew so limited that it was given up altogether. Neither will I attempt to give a review of the literature of its uses in obstetrics, but will limit my observations to the technique employed at present by Kronig and Gauss and their followers. In order to do this it will be necessary to quote freely from articles appearing in the lay periodicals, private correspondence, and the more recent reports in the professional press. To the end of these remarks will be appended a complete bibliography for the benefit of those seeking to familiarize themselves with the use of morphin-scopolamin anesthesia, as well as to furnish the data for conclusions of this paper.

The technique employed at the Freiburg clinic follows. A room completely isolated from the main part of the hospital is secured, and every effort made to prevent the entrance of noises of any description; in other words a sound proof room is used. The shades are drawn in order that the room may be in semi-darkness. A physician and nurse are constantly in attendance, assuring the patient that her pain will be lessened and that after it is over her memory of the event completely obliterated. Later her eyes are covered, and her ears plugged. When the pains occur regularly every five minutes and last at least thirty seconds, one-half gram narcophen (a succedaneum of morphin prepared by Boehringer & Sonne, of Mannheim, Germany) is combined with 1/150-1/200 gram scopolamin "haltbar," (prepared by F. Hoffman La Roche & Company of Basel, Switzerland) and injected into the glandular tissue around the mammary glands or other suitable place. The special preparations of narcophen and scopolamin are advised on account of their stability and standardization. Three-quarters of an hour later a second dose of the scopolamin is given. Further dosage depends entirely upon the memory test of the patient and varies with each individual case. The narcophen is rarely repeated on account of the danger of uterine

inertia, post-partum hemorrhage, and asphyxia of the child. The failures of this method in past years, according to Kronig and Gauss, were due to a number of causes, the chief ones being the combining of morphia with the scopolamin in succeeding doses, the use of deteriorated preparations of scopolamin, the lack of technique regarding room, sound and light; and the use of the method under the erroneous idea that it was to abolish pain, whereas it is only expected to cause loss of memory of the event. Various other reasons which have contributed to lack of success are advanced by their followers. An article by one of the latter appeared in a recent number of the *American Journal of Obstetrics* and a certain section has impressed me so much that I will quote it verbatim. "When this treatment was first instituted," it states, "many difficulties were encountered. Being an experiment, with its final results uncertain we hesitated to inform our patients and therefore lacked their co-operation. Dr. S— was not quite familiar with our type of women and could not accurately gauge the dosage and intervals. For our solutions we had to depend on a local chemist, who at best sent us preparations which quickly deteriorated. Our accommodations at the time were such that it was impossible to devote a special room to this work, the patients being treated on the regular delivery tables. As a result of these obstacles, our results in the early cases were not too encouraging."

To the psychologist this extract is particularly illuminating; we shall return to it a little later. I shall not enter into the physiological action of morphin and scopolamin knowing these premises to be familiar to you all, but will devote my attention to the effect on the parturient of another agent which, so far as I am able to learn, has never been mentioned in conjunction with this treatment. I refer to the power of suggestion which from a purely psychological standpoint is the most effective agent yet used in the production of twilight sleep.

This power of suggestion is probably one of the most easily misunderstood of all influences acting upon the human body and is most difficult for psychology to explain to one not familiar with the results obtained through psychotherapy.

Munsterberg states that "a suggestion is, we might say at first, an idea which has that power in our mind to suppress the opposite idea. A suggestion is an idea which in itself is not different from other ideas, but the way in which it takes possession of the mind reduces the chances of any opposite ideas; it inhibits them. From the most credulous to the stubborn we have every degree of suggestibility, the one impressed by the suggestive power of any idea which is brought to his mind, the other always inclined to distrust and to look over to the opposite argument. Moreover we are all in different degrees suggestible at different times and under various conditions. Emotions reinforce our readiness to accept suggestions. Hope and fear, fatigue and intoxicants, increase suggestibility very strongly, and expectation of coming under powerful influence may produce a sufficient change in the motor setting to realize any wonders. To look out on a wider perspective, we may add at once that an artificial increase of suggestibility is all which constitutes the state of hypnotism."

*Read before the Sixth Annual Meeting of the American Association of Clinical Research, Baltimore, Md., November 5, 1914.

Now, if we accept this to be true regarding suggestion, is it not easy to understand why the previously quoted follower of the Freiburg methods met with failure when he regarded twilight sleep an experiment? Lacking confidence in the ultimate result, he, consciously or unconsciously, transmitted this impression to his patients and therefore failed to gain their all important co-operation.

Briefly, labor pains are of two kinds, subjective pain, that which is experienced by the parturient, and objective pain, that which is understood as uterine contraction. In the most successful cases of the "dämmerschlaf," the patient becomes analgesic to the subjective pain, and while the objective pain is not interfered with, the memory for it is lost.

Does it not seem strange that a drug so potent as scopolamin "haltbar" in producing analgesia to subjective pain, and accomplishing prolonged interruptions in mental association, should require that the patient be expansively informed of its actions before it is administered, and then refuse to perform unless the proper stage setting of twilight and quietness were observed?

In his work on psychotherapy, Walsh states "when the subjects are normal, expectancy has much to do with the severity of the labor pains. In recent years so much fuss has been made and so much said and written about woman's burden and travail in the pains of childbirth, that preliminary dread and anxious attention have wrought young women up to such poignancy of expectation as to make these pains worse than they really are. In spite of this, multiparae, labor has lost most of its terrors, because real knowledge of its comparative ease has replaced the previous unfavorable suggestion, and, instead, there has come a proper appreciation of what will have to be borne, and the positive pleasure of the relief when it has been borne successfully."

If suggestion and expectancy of a painful childbirth augment the difficulties of labor, why should not suggestion and expectancy of a painless labor act with equal efficacy towards preventing pain?

Again Münsterberg states that "to prepare ourselves for one line of action means to close beforehand the channels of discharge for the opposite." Therefore if a patient has read of the wonders of the "dämmerschlaf," has been told of the wonders of the "dämmerschlaf," and expects to come under its wonderful influence, the expectation may produce a sufficient change in the motor setting to realize any wonders.

Before bringing these remarks to a close and arriving at my conclusions I wish to quote from an article appearing in the September number of a lay magazine. The reporter states that the party questioned was probably the most reliable authority on scopolamin she had found in Freiburg. The patient was a sincere student and investigator, who had a positive knowledge of the technical, as well as the personally experienced facts of scopolamin birth. She said "the 'dämmerschlaf' is really a subconscious condition in which the patient considers herself absolutely sound asleep and unconscious when she is in reality in a hypnotic condition, entirely susceptible to suggestion from the doctor."

Add to this statement the following extract from a letter written me by a well known authority on obstetrics: "In my inspection of the Freiburg clinic in 1912, I got the impression that suggestion had a good deal to do with the result of twilight sleep." Professor Gauss admitted to me that the average dose to the patient was one hypodermic of .25 gr. morphia and .02 gr. scopolamin. Anyone who knows the effects of these remedies must realize that this is not sufficient to

diminish the pains of labor and with the darkened room and quiet slippers and the assurance to the patient that she was not going to have pain and then that she was not having pain, and finally that she had not had any, sends the patient out of the hospital with the idea that her labors had been painless. If morphia enough is given to make the labors really painless, I found by experience that we must expect inertia, hemorrhage and asphyxia in the baby."

In conclusion I wish to state that,

1. I regard the twilight sleep used at Freiburg as a hypnotic state (not an hypnotic state) due to suggestion.

2. The narcophen is required to quiet the emotional state of the patient sufficiently to make her amenable to suggestion.

3. The scopolamin in the dosage used at Freiburg has very little effect other than a psychotherapeutic one on the mental associations.

4. On account of the widespread publicity, twilight effect, quiet room, and other details of technique, are essential for its success.

5. If narcophen is given in sufficient dose to produce analgesia, instruments or pituitrin are necessary to accomplish the birth of the child, thus increasing the danger of post-partum hemorrhage, uterine inertia, and asphyxia of the child.

6. Scopolamin in too large or too frequent doses may produce delirium or death.

7. If the suggestion is sufficiently strong, previous to and during labor, a physician may possibly secure the results claimed for twilight sleep, without any of the dangers attached thereto, by using 1/8 gr. morph. hypo., provided he uses the Freiburg technique, and follows the morphia with gts. xxx aqua dest. hypodermically every half hour.

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PRESSURE ANESTHESIA.*

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Pressure anesthesia is the title originally given by Dr. William H. FitzGerald, chief surgeon of the nose and throat department of the St. Francis Hospital, Hartford, Conn., to the method of producing what he should have termed analgesia instead of anesthesia. During the year or so which has elapsed since Dr. FitzGerald's original announcement, he has changed the name of his procedure from pressure anesthesia to zonotherapy or zonatherapy, both terms being used by his followers. A therapy is quite another matter from a method of producing anesthesia, consequently Dr. FitzGerald's claims have advanced from merely a matter of the temporary stopping of sensation, particularly of pain, to an allegation to actual therapeutic power in the same territory and by the same means.

It has been my personal privilege to visit Dr. FitzGerald in Hartford and to witness his clinical demonstrations there and in Boston and to receive personal instruction from him in his technique. I have also had the opportunity of conversing at length with some physicians and dentists who have been closely associated with him during the history of this method of anesthesia or therapeutics and have been working personally in my own way investigating these claims. As the medical journals decline to publish such a radical departure from heretofore recognized procedures, and as old organizations decline to permit of demonstrations of this method, Dr. FitzGerald, although a member of the national and local medical bodies, was obliged to look elsewhere for his first recognition. After, however, a dozen years of experimentation in the application of his discoveries to his own specialty of nose and throat, he, naturally, applied the anesthesia possibilities to one of the portions of the body nearest and most intimately associated to his own field of operation, namely, the teeth. He discovered that his methods would make painless dentistry possible. Dental affairs in Hartford are really amazing today, as many of the leading dental specialists in that city are doing all of their work without pain and without local or general anesthesia or the use of any analgesic preparations or applications. Dental conventions have been inviting Dr. FitzGerald to demonstrate before them and I have personally had the opportunity of witnessing very considerable dental operations, including the extractions of firmly imbedded molars without any evidence of pain whatsoever on the part of the victims.

The most spectacular event which I witnessed at Hartford was the extraction of three molars, none of which were loose, with no anesthesia or preparation of any sort, except pressure. I stood beside the dental chair and watched this patient closely, searching for the quiver of an eyelid or one single reflex movement of any part of the body which would indicate pain. Nothing of this sort occurred. Instead the patient calmly asked the dentist if the teeth were out. I stood beside the operator when this anesthesia was administered. It was accomplished by pressing, with a blunt piece of metal, upon the inferior dental nerve at the foramen on the inner aspect of the inferior maxilla with counter pressure with the finger on the gum at the root of the tooth on the external aspect of the jaw. This pressure is kept up for from one to three minutes,

according to the severity of the operation. The location is changed for different teeth. The instrument is not necessary as the pressure can be made entirely with the thumb and finger. The pressure on the foramen may be omitted and the same result secured by squeezing the gum at the root of the tooth with one finger inside and the other outside. Pain is impossible if this is properly done.

Dr. FitzGerald's panacea for headache, without wishing to detract in the slightest from the value of this other work, is nothing but one of the many technical procedures well known to the osteopathic physician. It consists simply of inhibition upon the hard palate by pressure with the thumb or finger, the point of pressure being selected according to the location of pain. This was successfully worked upon a number of dentists at Hartford, but no more successfully than has been the case in osteopathic practice for many years. I asked Dr. FitzGerald if he expected temporary or lasting effect from his procedure. He replied that if the headache stopped it would not as a rule return. I asked him, if the cause was positively known to be digestive, would he still use the same treatment and give the same prognosis. He replied in the affirmative, explaining that anything which reduced the pain would also tend to help remedy the cause, no matter how distant it happened to be.

Thus far we have been dealing with simple pressure anesthesia which can be explained anatomically and physiologically as occurring on definite known nerve paths with direct connection between the pressure and the symptom of pain. But from here on we must give Dr. FitzGerald full credit for absolute originality. He has been working for five years on the clinical demonstration of his theory of reflex pressure anesthesia and is able to show results, but frankly admits that he cannot explain how it is accomplished.

Dr. FitzGerald administers his reflex pressure anesthesia by grasping the second phalanx of a finger or toe between his thumb and finger, and holding it firmly close to the distal end for about one minute. During this time his grasp is on the lateral aspects. Then for another minute he presses similarly upon the dorsal and plantar aspects. The degree of pressure is just short of pain. The patient promptly says that the finger feels numb, and he traces the progress of a wave of numbness extending gradually upward the entire height of the body. When the numbness passes the location of the pain for which the anesthesia is being administered, the suffering ceases, and when the area to be operated upon by dentistry or minor surgery is reached by the numb wave, surgery may be instituted without pain. He uses the right hand or foot for the right lateral half of the body above, and the left for the other side. The dividing line between the two areas is sharply defined. The thumb will anesthetize the two incisors on its own side, the fore finger the first bicuspid, the second finger the next two, the third finger the next, and the little fingers the last ones. These anesthesias always proceed upwards. He uses the thumb and fingers for dental work, but for minor surgery or for a large area, he advises bi-manual pressure on the radius and ulna at the wrist.

One very significant feature of his work is that, as he admitted to me personally, it really doesn't make any difference whether the pressure is applied to fingers or other parts of the body, provided it is made upon bony prominences. He says it must never be done upon any other structures. He says there is no conspicuous

*Read before the Sixth Annual Meeting of the American Association of Clinical Research, Baltimore, Md., November 7, 1914.

bony prominence which will not give reflex pressure anesthesia upon pressure.

The duration of the pressure is from one to three minutes. Then it is removed and the anesthesia lasts for about half an hour, although the pressure can be repeated at any time, if necessary. He says that operators unfamiliar with the technique may not get the result at once, and should persevere until they do, as he insists that it can never fail if correctly administered.

There is a remarkable analogy between the FitzGerald idea of pressing upon any bony prominences, and the unique procedures of Dr. George W. McPherson of Montreal, who has been specializing for several years upon treatment by way of the sacral nerves exclusively.

Dr. FitzGerald claims to have located about three hundred different spots in the mouth, nose, throat and upon the tongue where pressure applied for a moment or two with the finger or with a blunt probe wound with cotton will produce anesthesia in some definite but remote portion of the body. He has mapped out his areas so far that he now includes the entire body.

It is not only for anesthesia alone, however, that these pressures are made. Dr. FitzGerald claims that there is a curative influence as well. At Hartford he showed a picture of a woman with a large growth on the neck, which had been diagnosed as carcinoma, and then he showed us the woman with the growth almost gone after treatment for a year or so. He also showed pictures of some goitre cases the later ones showing the swelling almost entirely gone. In all of these cases he claims there has been no treatment other than his pressure.

Dr. Edwin F. Bowers, writing in his description of a demonstration by Dr. FitzGerald in the operating room of St. Francis Hospital before a party of twenty-five physicians and surgeons, says:

"The next case was a gathering of the middle ear. The surgeon passed a straight probe through the right nostril to a point high in the vault of the pharynx, pressed steadily for half a minute, and then punctured the distended eardrum—usually an extremely painful procedure, but borne in this instance without apparent discomfort.

"Following this, he removed a splinter of steel from an eyeball. The most marvelous feature of this little operation was the abolition of the "wink reflex." The probe could be drawn over the surface of the eye or the tissues surrounding it, as though the patient was completely under general anesthesia.

"One woman had a hard, dense growth, which involved the throat, uvula, right tonsil, and part of the palate, extending down the neck for three and a half inches. She had eaten no solid food for over nine months. In fact, the tumor prevented her opening her mouth more than a fraction of an inch. Yet she reported having gained twenty pounds in five months' treatment, was able to open her mouth as wide as ever, and could now eat and thoroughly enjoy any form of solid food. Also the mass had decreased to the size of a small egg, and was quite soft and yielding to the touch.

"In a case of cancer at the base of the tongue after two months' treatment there was relief from constant pain, the breaking down of tissue had been arrested, the size of the growth was materially reduced, and the cancerous odor markedly corrected.

"One interesting and suggestive case was a patient of Dr. Strobel's, of the State Hospital at Newington, a victim of laryngeal tuberculosis. He suffered extreme pain in the throat, and through both lungs, which were practically filled with râles. He also coughed incessantly, and breathed in pitiful little gasps. Dr. FitzGerald made deep, perhaps slightly painful, pressure on the tongue, beginning with the anterior third, and moving back slowly to about the middle of the posterior third. He also probed in the neighborhood of the anterior pillars.

"Within fifteen minutes this patient had expectorated freely, and was speaking in a distinctly resonant voice—although, of course, with some hoarseness—and expressed himself as perfectly free from pain.

"Several cases of bronchitis and 'clergyman's sore throat' and an interesting goitre patient of Dr. Frank J. Ronayne's were

seen, all of whom were greatly improved. In fact, many cases of goitre, even of the true exophthalmic type, seemed to have been practically cured by probe-pressure therapy.

"Hay fever, Dr. FitzGerald claims, is relieved in almost ninety-five per cent. of patients."

Painful conditions peculiar to women yield magically in many instances. Take a large tablespoon, place the point of the handle on a spot three-quarters of the way back and on the median line of the tongue, press firmly and hold for a minute; relax, and re-apply pressure, at the same time turning the spoon from side to side to emphasize the points of focus. Then pass the spoon farther back, press gently on the posterior wall of the pharynx. Methods similar to this relieved two cases.

A case of right intercostal neuralgia which had persisted for several days was relieved in a few moments by pressure on two points in the front of the mouth at the root of the tongue, and a rather drastic application of the tongue depressor about one-third of the way back from the tip, and slightly to the right of the central line. Two weeks later this patient reported that he had experienced no return of the trouble.

I have seen several operations, including the removal of turbinates, and one very bad crop of adenoids, done under nerve pressure anesthesia apparently without hurting.

At least forty or fifty of those points which have to do with the head, ears, and eyes are located in the nose and the passage leading from the nose to the throat.

The pharynx, the roof of the mouth, and the throat contribute at least one hundred more foci. In a general way these govern the functions of the head, more particularly the back part, the throat as far as the bronchi, and the arms and their extremities.

The floor of the mouth, areas concealed behind the little pillars in the oral cavity, and the space directly under the tongue are particularly rich in nerve centers, containing perhaps one hundred more, and control the bronchi, thoracic, and abdominal organs, and the lower limbs.

The tongue contributes its quota of perhaps fifty zones, and may be crudely divided, for purposes of classification, into two anterior and two posterior parts, each halved by a line running through the centre from tip to base.

Many areas on the tongue duplicate and "reinforce" other zones within the cavity of the mouth, nose and throat. When this is the case both centres are treated. Pressure on the first quarter of the tongue seems to influence the larynx and vocal cords; from the first quarter to the half, the thyroid gland and the bronchi; from the half to the third quarter, the lungs, the heart and stomach; from the third quarter to the base, the abdominal organs.

The most recent development in Dr. FitzGerald's work is the change of the name of his method from pressure anesthesia to zonotherapy. He has done this for two reasons. First, because he has succeeded in mapping out the zones which he claims can be accurately determined for the entire body and, second, because he has changed it from a method of anesthesia to a therapeutic system. His theory is that by the same means by which the anesthesia is secured, there is also induced a healing process. He makes no attempt to explain why this is so.

I have personally tested the direct anesthesia method as utilized in dentistry and found this to be perfectly successful, but my experiments with the indirect method of pressure on fingers and toes have not been such as to make me enthusiastic over the possibilities, although I think it should be emphasized most emphatically that

another person would not be expected to procure results as brilliant as those of the originator until there is greater opportunity to study and experiment with the technique.

One rather startling result in my private practice I cannot refrain from mentioning, and that was a case of chronic obstipation which had resisted medical treatment for many years. Osteopathic adjustment which I administered to the best of my ability for a couple of months was also unavailing. A single treatment by FitzGerald's method, consisting of pressure with the probe on the back of the tongue for a period of one minute resulted in a complete cure which has persisted to the present time and which is about four or five months since the treatment.

I have no intention of denying that such a case as this may be a perfect illustration of results of suggestive therapeutics. I do not claim for a minute that this is not so. The only reply to such a criticism would be that if true it is nothing against the method whatever. If we can cure obstinate chronic functional diseases which resist the conventional methods of treatment by means of suggestive therapeutics assisted by the application of the probe for one minute, we had better do it.

The zone part of the word zonotherapy simply means that FitzGerald has divided the body into lateral halves. Each half is divided into five equal zones corresponding in their control to the five fingers or toes, zones on the anterior surface of the body corresponding to pressure control points on the dorsal surface of the hand and foot and zones on the posterior side corresponding with pressure points on the palmar surface of the hands and feet. The numbering of the zones begins at the median line on each side and the numbering of the fingers and toes begins with the thumb and great toe.

The Physician's Library

Infection and Immunity. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. Third edition, enlarged and thoroughly revised. Cloth, 351 pages, illustrated. \$3.25 net. Philadelphia and New York: Lea & Febiger, 1915.

This edition is much superior to its predecessor of two years ago, as every advance in the field has been carefully noted. Among the additions and those subjects which have been rewritten are the advances in the study of Abderhalden's protective ferments; the Wasserman reaction; minimizing the danger from anaphylactic shock during serum treatment; the observations of Schick on the recognition through allergic skin reactions of individuals whose blood normally contains diphtheria antitoxin in quantities sufficient for protection; the possibilities of better results in the serum treatment of tetanus, and the potentialities of vaccine treatment in Hodgkin's disease. Minute attention is given immunity in various diseases; to the preparation of autogenous and other vaccines; to methods of immunization and to the technic of immunization tests.

Simon has also carefully developed our knowledge of anaphylaxis, active and passive immunization, auto and normal serum therapy, ferment and allergic reactions, the chemo-therapy of the pneumococcus and of cancer and the serum diagnosis of pregnancy.

Medical Electricity and Roentgen Rays and Radium. By Sinclair Tousey, A. M., M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Second edition, thoroughly revised and enlarged. Cloth, 1219 pages, with 798 practical illustrations, 16 in colors. Cloth, \$7.50 net; half morocco, \$9.00 net. Philadelphia and London: W. B. Saunders Company, 1915.

The value of this book to those interested in the subject cannot be minimized. Practically every point in electro-therapeutics has been covered. Sinusoidal currents, diathermy, the various angles of radiography and roentgen therapy and radium therapy are amply discussed in the chapters on the *x-ray*, the interpretation of the plates is most lucidly given.

The book, unlike so many appeals to the specialist as well as the man who combines electro-therapy with his other methods of treating disease. The plates are illuminating and the typography of a high order.

A Text-book of Diseases of the Nose and Throat. By D. Braden Kyle, A. M., M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fifth edition, thoroughly revised and enlarged. Cloth, 856 pages with 272 illustrations, 27 of them in colors. \$4.50 net. Philadelphia and London: W. B. Saunders Company, 1914.

Five editions of this standard work have appeared in 14 years, proof positive of its excellence and practicability.

In the revision many new subjects have been introduced. Among these are lactic bacteriotherapy in atrophic rhinitis and pharyngeal affections. Salvarsan in syphilis of the upper respiratory tract; negative air pressure in accessory sinus disease and congenital insufficiency of the palate.

One of the most valuable features of the book is its directness. The author treats positive conditions very effectively and covers the wide range of laryngological and nasal diseases amply.

Infections and Resistance. By Hans Zinsser, M. D., Professor of Bacteriology in Columbia University. Cloth, 546 pages, \$3.50 net. New York: The Macmillan Company, 1914.

The volume will long be regarded as a standard. It was written for the student who enters the medical school with a firm biological foundation. It is not, therefore, needlessly elementary, nor is it as abstruse as some works on the subject.

The author has based each chapter upon his lectures, to the end that they have a conversational tone that adds materially to the interest in reading. To critically review the book would be to delve into the intricacies of the science of immunity and infection and its kindred subjects. It offers to practitioner and student alike a fountain head of knowledge from which all who wish may drink.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume IV. Number II. (April 1915). Octavo of 197 pages, 47 illustrations. Published Bi-Monthly. Price per year: Paper, \$8.00, Cloth, \$12.00. Philadelphia and London: W. B. Saunders Company, 1915.

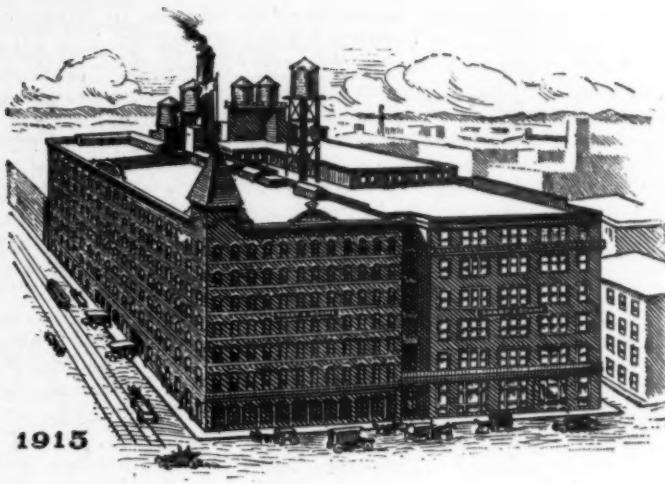
This number is as interesting as its predecessors. Dr. W. L. Rodman of Philadelphia gives an enlightening clinic on carcinoma of the breast and Dr. C. L. Mix contributes a diagnostic talk on "Spontaneous Massive

(Continued on page 20.)



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4 level tablespoonfuls
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Give one to three ounces every hour or two, according to the age of the baby, continuing until stools lessen in number and improve in character.

Milk, preferably skimmed, may then be substituted for water—one ounce each day—until regular proportions of milk and water, adapted to the age of the baby, are reached.

(Continued from page 246.)

Coagulation of Cerebrospinal Fluid in the Xanthochromia. The author's diagnostic talk on osteomyelitis is of great value and the remaining clinics treat of live subjects.

Progressive Medicine. Vol. XVII, No. 1, March, 1915. Edited by H. A. Hare, M. D. Paper, 382 pages, \$6.00 per annum. Philadelphia and New York: Lea & Febiger, 1915.

The contents of this valuable number includes: Surgery of the Head and Neck, by Charles H. Frazier; Surgery of the Thorax, Excluding Diseases of the Breast, by George P. Müller; Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia, and Influenza, by John Ruhräh; Diseases of Children, by Floyd M. Crandall; Rhinology and Laryngology, by George B. Wood and Otology by Truman L. Saunders.

It is impossible to discriminate in this feast of good things. Each one is a complete review of the subject in question.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, M. D., Professor of Pathology, University of Colorado. Third edition, revised and enlarged. Cloth, 585 pages with 176 text-illustrations and 13 colored plates. \$2.50 net. Philadelphia and London: W. B. Saunders Company, 1914.

This is a very useful book for the physician who is anxious to perfect himself in the latest methods of laboratory diagnosis. In addition to a description of the use of the microscope it teaches the reader how to examine sputum, urine, blood, feces, stomach contents and pus. It also exemplifies bacteriologic methods, preparation and uses of vaccines and serodiagnostic methods.

The Principles and Practice of Tooth Extraction and Local Anesthesia of the Maxillae. By William J. Lederer, D.D.S., Dental Consultant to the German Hospital in the City of New York. Cloth, 262 pages. Illustrated with 120 Textual Figures and 8 Figures on 4 plates. \$3.00 New York: The Rebman Company, 1915.

It is seldom that a dental book can properly be reviewed in a medical journal, but this little volume is so replete with the essentials of local anesthesia that it is worthy of being directed to the attention of medical men. Physicians in country districts are often called upon to perform the functions properly belonging to the dentist. Those men need this book, for it shows, how, under novocain anesthesia, to perform all operations in and about the mouth. Among the subjects considered are anesthesia and local anesthesia, the technique of local (infiltration) anesthesia, the technique indications and contraindications for local and conducive (regional) anesthesia, inhalation anesthesia versus regional anesthesia and shock in oral surgery. Lederer is a great believer in novocain anesthesia and is a well known teacher of this subject. He has produced an exceedingly practical book based on personal experience and richly illustrated with cuts from his own cases.

Menorrhagia due to chronic subinvolution of the uterus is best treated with pituitary extract made from the posterior lobe. This may be administered by the mouth in doses of two grains twice a day.

Women who have had one kidney removed for tubercular infection can bear a living child.

Professor Cabot and Women Physicians.

To the Editor of the Medical Times:

I have been asked by a number of colleagues of both sexes whether I would not be willing to write a letter to the press stating my views concerning what has been considered an unjustifiable attack on women physicians made by Prof. Richard C. Cabot of Harvard Medical School in a recent address delivered before the graduating class of the Woman's Medical College of Philadelphia. I ask your kind co-operation because of the more or less sensational headings with which Dr. Cabot's remarks have been reproduced in the lay press and the likelihood of real harm being done to a just cause if some of the statements are not contradicted. Thus, for example, a New York paper, usually known for its dignified way of publishing news, headed the article "Doctor Man Calls Doctor Woman Unfit."

It is alleged that Dr. Cabot asserted that the majority of women physicians were not temperamentally and physically adapted for the more strenuous branches of the profession and therefore were "disappointed and dissatisfied." He is reported to have furthermore ventured the suggestion that women physicians should avoid taking up general practice and research work and should interest themselves in social service. Such statements as these, if accurately reported, must have surprised a great many physicians of the so-called stronger sex, as they have surprised me, if it has been their privilege, as it has been mine, to associate professionally with our sisters in medical work.

Dr. Cabot, in my opinion, has committed a grave error and has made an unjust accusation and I feel sure that he will regret the statement after more serious reflection. I know Dr. Cabot personally and know him to be of that large-minded type of men who are willing to retract what may have been said on the impulse of the moment and which after due reflection they find to be erroneous.

It seems to me that we must admit that concerning the relatively small number of women physicians in the world there are as many among them who distinguish themselves as among the men physicians. Dr. Cabot must be familiar with the work of the pioneers among women physicians who have become illustrious in all branches of medicine. I will merely recall the names of a few of them: Emily Blackwell of New York, founder of the Woman's College; Anne Cleveland of Philadelphia; Sarah Hackett Stevenson of Chicago; Mary Putnam Jacobi of New York; Cornelia Brown, the celebrated surgeon of San Francisco; Celia Mosher of the same city; Clara Marshall of Philadelphia; Lillian H. South of Kentucky, Ex-Vice-President of the A. M. A., noted for her work in the extermination of hookworm disease; Helen C. Putnam of Providence, R. I., one of our best authorities on school hygiene; Sarah J. McNutt, S. Josephine Baker, Lydia Allen De Vilbis, Rosalia Slaughter Morton and Anna W. Williams of New York, all known for their unceasing labor on behalf of scientific medicine, public health, and child hygiene. Besides these, there are many others well known throughout the country for their unselfish and excellent work in their respective branches. Abroad is Dr. Lydia Rabinowitsch of Berlin, who recently received the title of Professor from the German government for her researches in tuberculosis; the late Robert Koch counted her among his most distinguished pupils. Paris, too, has many women physicians of distinction, and the greatest among them is Madame Klumpke-Dejerine,

(Continued on page 22.)

IN THE SUMMER FEEDING OF YOUNG INFANTS

the safest and most satisfactory substitute for mother's milk is **Trommer Malt Soup**. Unfortunately, too little attention has been paid in the past to the diastatic ferment and carbohydrates that are found in human milk and which play such an important part in infant nutrition. In fact most artificial infant foods contain no disastase whatsoever. It is not surprising, therefore, that the use of these foods is so often followed by malnutrition.

To those who have realized, however, the importance of diastase in the artificial feeding of infants **Trommer Malt Soup** has solved the problem. Easily made with



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many a physician has learned during the past forty years to turn to this standard extract of malt when confronted by the necessity of providing a safe and suitable diet for infants denied their mother's milk.

The simplicity and convenience of the food thus produced not only make it especially appealing but it is so easily and quickly prepared that the amount required for each feeding can be made up as needed, thus avoiding the dangers of contamination that always menace the food that must be kept standing.

Babies placed on **Trommer Malt Soup** do splendidly and the gain in weight, vitality and strength leaves nothing to be desired. The effect on the alimentary processes is particularly gratifying and it is a notable fact that infants fed with this food are remarkably free from digestive disturbance. This naturally suggests the use of this food during the heated season, and summer diarrhea rarely afflicts infants thus nourished.

It is a fact of no little significance that medical men who once commence the use of **Trommer Malt Extract** in the modification of cows' milk rarely if ever return to any other food. The results obtained make it entirely unnecessary.

Send for valuable booklet on *The Use of Malt Soup in Infant Feeding*.

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(Continued from page 22.)

celebrated for her researches in neurology. There are hundreds of other women physicians not all equally renowned but certainly equally successful in their practice.

There are, of course, disappointments in the medical profession to women as well as to men. Some of both sexes are unsuccessful but to generalize and say that women are unsuited for the medical career, and particularly for general practice, is a grave injustice. The woman who enters the medical profession with that enthusiasm, devotion, and self-sacrifice characteristic of her sex will not only be of as great service to suffering mankind as her brother physician but will rarely fail. She will be neither "disappointed or dissatisfied" but will do her work as well as the rest of us.

The social service of which Dr. Cabot thinks women are particularly capable can be rendered by the woman of average intelligence without the four or five years training necessary to attain an up-to-date medical education. If in Dr. Cabot's opinion woman has a better understanding of social service than man has, then the woman physician can aid and guide the lay worker in the field of usefulness with all the greater intelligence and skill.

This is not the age of either man or woman alone; let us work side by side with our sisters in medicine, open the doors of all the medical schools to women and give them equal opportunity and they will do their share in advancing medical science, alleviating distress and suffering, sharing in social service as they are sharing nobly in other fields of human activity.

New York.

S. ADOLPHUS KNOFF, M. D.

Exercise and Competition.

Physical exercise, if it is to be real hygienic service, has an object quite different from the preparation of a specially equipped individual trained for a game. Exercise is intended to benefit all the muscles and all the pupils. Its aim is to advance the bodily equipment of the great numbers of our youth; otherwise our so-called physical education fails to serve the community at large. Athletic prowess necessitates taxing the organism to the very limit of its endurance; it is a dangerous expedient and should never become an experiment. The idea of athletic competition must not be transplanted to the schools, where it is certain to endanger the health of the average group of students.—(Jour. A. M. A.)

The New York Geriatric Society.

The New York Geriatric Society was organized on June 2 with the following officers:

President, Robert Abrahams; vice-president, Edward P. Swift; secretary, I. L. Nascher.

This is the first society ever organized for the scientific study of senile conditions, the causes of ageing, the diseases of advanced life and the care of the aged. Reports, papers and reprints dealing with these subjects are solicited and should be sent to Dr. Nascher at 103 West 88th Street.

Dr. Reynold Webb Wilcox of New York, one of the contributing editors of the MEDICAL TIMES, has been honored with the degree of Doctor of Civil Law by Wittenberg College.

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